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Transport services — Logistics — Glossary of terms

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ICS 01.040.03; 03.100.10

BSI
British Standards

National foreword

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Foreword

This European Standard (EN 14943:2005) has been prepared by Technical Committee CEN/TC 320 “Transport - Logistics and services”, the secretariat of which is held by DS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

This European Standard has been prepared by Working Group 6 “Transport Services: Logistics” of CEN/TC 320 “Transport Services”.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

Logistics is now widely recognised as a highly important function of every organisation dealing with physical goods (and of many that do not). In order to make it work effectively along the total physical and information chains of supply, delivery and planning, it uses a number of terms that, while in frequent use, are rarely fully defined. The wider dissemination of logistics concepts has brought about the creation of new terms and changes in meaning of older terms; these need to be understood throughout Europe.

Although the word “logistics” has military origins, the concepts and functions of logistics are nowadays adopted by all kinds of private-sector and public-sector organisations as well as in the military sector. In this European Standard the terms are defined with reference to the needs of commercial organisations, i.e. business systems. Most of the definitions are also appropriate for non-commercial organisations.

In preparing this list of terms stringent selection criteria have been applied. The Glossary lists only those terms that have a realistic relationship with logistics. Terms of a general nature, having a meaning which is identical to or very similar to the definition to be found in a conventional dictionary, are not listed.

Similarly, terms which are frequently used in a logistics environment but which originate from a different business function or are of a specialist nature are not listed. This refers in particular to terms in the areas of:

- finance;
- commerce, including payment terms;
- information technology;
- mathematics.

Terms are defined by reference to their usage in European organisations, although some terms and definitions of American origin that have achieved wide acceptance are also included.

Important sources of information have included:

- *Terminology in Logistics: Terms & Definitions.* European Logistics Association (ELA), Brussels, 1994
- *BS 5191 Production Planning and Control Terms - Vocabulary.* British Standards Institution (BSi), London (new edition in press).
- *APICS Dictionary (10th edition).* APICS, Falls Church, VA, USA, 2000

Where possible, reference has been made to existing *de jure* and *de facto* standards such as:

- *UN Trade Data Elements Directory*
- Delivery conditions as described by the International Chamber of Commerce

- *UN / EDIFACT: United Nations Electronic Data Interchange for Administration andTransport.* Economic Commission for Europe, ISBN 92-1-116650.

Throughout, consistency with terms used in ISO, EDI and other publications has been sought.

This Glossary is an update and extension of pEN 12777, although some terms which are now considered out-of-date have been eliminated. A number of new terms have been added as a consequence of new developments in the field of logistics.

The sequence of entries in the Glossary is purely alphabetical, for simplicity and ease of use. In addition an Annexe provides a categorisation of terms. A second Annex lists logistics-related acronyms.

A recent CEN Report (CR 13908), prepared by CEN/TC 273/WG 4 “Logistics Performance Measures, Requirements and Measuring Methods”, deals comprehensively with the definition and measurement of performance in logistics. Consequently only a limited number of logistics performance indicators has been included in this Glossary of terms.

1 Scope

This European Standard establishes definitions for commonly used terms in logistics. It encompasses all aspects of logistics and supply chain management including transport. The terms, with their definitions, are presented in strict alphabetical order with no attempt to relate them to any particular function within the logistics concept.

2 Normative references

Not applicable.

3 Terms and definitions

3.1
A item
small group of items (material or product) that according to an ABC classification, represent a large part of the total consumption value, production value, turnover value or stocks

[See: ABC classification]

3.2
ABC analysis (Pareto-analysis)
method of analysis where items are sorted according to certain characteristics (e.g. historical or anticipated consumption multiplied by unit value), into sequential order and stratified into classes

3.3
ABC classification
classification of a group of items (materials or products) into three or more categories stratified in sequence of their importance or magnitude, e.g. for the purpose of stock control and planning.

NOTE The classification is the result of an ABC analysis.

The categories being designated, for example, A, B and C, where:

A: small group of items (materials or products) that represents a large part of the total consumption value, production value, turnover value or stocks. Most attention is paid to this category;

B: intermediate group that is paid less attention;

C: large group of items (materials or products) that represent only a small part of the total consumption value, production value, turnover value or stocks. Relatively speaking, this category receives the least attention and requires mostly a different solution

3.4
ABC zoning
assignment of storage locations in a store to one of three or more areas (zones) according to travel distance/time to the point of supply in order to minimise travel time

3.5
abnormal demand
see: incidental demand

3.6
accessibility
ability of a carrier to provide service between a provenance and a destination

3.7
accessorial service
service rendered by a carrier in addition to its transportation service, e.g. such as stopping in transit to complete loading or for partial unloading, or heating, refrigerating, or storing shipped goods

3.8
accompanied transport
transport of complete road vehicles through another mode of transport (e.g. by ferry or train) accompanied by the driver

3.9
accumulation bin (assembly bin)
physical location used to accumulate all of the components that go into an assembly before sending the assembly order out to the assembly floor

3.10
active stock
stock that covers raw material, work in process, finished products which will be used or sold within a given period

3.11
acknowledgement of receipt
notification relating to the receipt of something such as goods, messages and documents

3.12
actual demand
demand that represents firm customer orders

3.13
actual stock
amount of stock at a particular moment in time

3.14
add/delete bill of material
planning bill of material to forecast options

NOTE In this bill of material a standard item can be replaced by another item.

3.15
additional loading device
standardised carrying platform suited to materials handling equipment or surrounding/bordering vessel that loads quantities of goods and combines them for transportation, transhipment or storing

3.16
additional requirement
supplementary need of materials which is calculated according to a predetermined schedule from supplementary needs arising from rejects and technical changes etc., and/or a known incidental need

NOTE It is a part of the gross requirements.

3.17
ADR(Accord européen relatif au transport international des marchandises Dangereuses par Route)
regulations which govern the international movement of dangerous goods by road

3.18
advance material request (AMR)
ordering materials before the release of the formal product design

3.19
advanced planning and scheduling (APS)
decision support tools employing computer based optimisation, that deal with analysis and planning of logistics and manufacturing over short, intermediate, and long-term time periods

3.20
advanced ship notice (ASN)
EDI notification of shipment of product

3.21
agent
person or organization authorized to act for or on behalf of another person or organization

3.22
aggregate forecast
estimate of sales for some grouping of products, perhaps for all products or within a family of products, produced by some manufacturing facility

NOTE Stated in terms of units or money worth or both, the aggregate forecast is used for sales and operations planning purposes and to control the total company forecast.

3.23
aggregate inventory management
establishing the overall levels of stock desired and implementing controls to ensure that individual replenishment decisions achieve this goal

3.24
aggregate plan
plan that includes data relating to all items or to groups or families of items

NOTE Usually the basis of the production plan.

3.25
aggregate stock
stock for any grouping of items or products, involving multiple stock keeping units

3.26
aggregation (- level, - plan, - reporting, - stock etc.)
combining parts to form sets on the basis of certain criteria, the aim being to enable these sets to be regarded as a single whole with respect to particular points of consideration or planning functions. These sets can again be combined to form new sets

NOTE 1 Figures relating to sets frequently possess more reliability for (long term) planning than the figures relating to the parts. For the aggregation of products, the criteria can, for example, be selected on the basis of commercial considerations (e.g. all products with a particular performance) or production considerations (e.g. all products with a particular type of labour content). The sets of products created in this way can be regarded as a single whole for the purpose of planning.

NOTE 2 Reverse of aggregation is detailing.

3.27
aggregation level
extend to which products or items are grouped in an aggregate plan

3.28
air consignment note
see: air way bill

3.29
air container
container conforming to European Standards laid down for air transportation

3.30
air/surface (intermodal) container
article of transport equipment having an internal volume of 1 m^3 (35,3 ft^3) or more, fitted with top and bottom corner fittings, with restraint provisions compatible with an aircraft restraint system, and an entirely flush base bottom to allow handling on roll conveyor cargo handling systems

NOTE The container is primarily intended for transport by air and interchange with surface transport modes (road, rail and sea). Containers of these types have type codes 90 to 99.

3.31
air way bill (AWB), (air consignment note)
document made out by or on behalf of the carrier(s), confirming receipt of the goods by the carrier and evidencing the contract between the shipper and the carrier(s) for the carriage of goods by aircraft as described therein

3.32
all time order
last order for a particular product in the last phase of its life cycle

NOTE This order is of such a size that the total demand for and/or consumption of this product that is to be expected in the future can be satisfied.

3.33
all time requirement
total requirement for a particular product to be expected in the future

NOTE Used for products in the last phase of their life cycles, when production is (nearly) stopped.

3.34
all time stock
stock accumulated in view of the fact that the relevant product is not to be produced any longer

3.35
allocated material
material on hand or on order that is assigned to specific future production or customer order.

[See also: reserved material]

3.36
allocation (reservation)
division and/or allotment/assignment of goods, activities, capacity, costs, and/or (production) resources to organizational units such as customers, suppliers, factory or department or to products

3.37
allotment
(in transport) share of the capacity of a means of transport assigned to a certain party, e.g. a carrier or an agent, for the purpose of the booking of cargo for a specific voyage

3.38
amplification effect (bullwhip effect, business chain effect, Forrester effect)
see: Forrester effect

3.39
ancillary material (indirect material)
material used in production which is no longer found as such in the product, e.g. cutting oil, maintenance material

3.40
approved demand
units ordered and accepted in an ordering system, due for immediate delivery

NOTE Forward orders become approved demand when they are released for immediate delivery.

3.41
areas/fields of application
application of logistics in subsystems such as procurement, production, distribution, product maintenance, and reversed distribution is described as logistics with the appropriate pre-fix

3.42
assemble to order
type of manufacturing in which components and/or subassemblies are assembled or configured only when a customer order is received.

[See also : Decoupling point]

3.43
assembled part (sub-assembly)
assembled product which itself is used in a higher level assembled product

3.44
assembly
1. (process) stage of production in which components are put together into an end product appropriate to the process concerned

2. (product) combination of parts and possibly raw materials put together to make up a composite article

3.45
assembly lead time
period of time between the moment a work order is issued to the assembly floor and the moment of delivery of the assembled product to the store or receiving organisations

3.46
assembly level
relative position of a part or sub-assembly within a hierarchy of assemblies

NOTE It is recommended that a final assembly be designated assembly level 0; the sub-assemblies and/or parts constituting a final assembly should be designated assembly level 1, 2, and so on.

3.47
ATA carnet (Admission Temporaire / Temporary Admission)
international customs document that enables travellers taking goods abroad temporarily (e.g. samples, goods for exhibitions) to avoid all duty payments and formalities at the frontier

3.48
auto-discrimination
ability of a bar code reader to distinguish automatically between two or more symbologies (e.g. Interleaved 2 of 5, Code 39)

3.49
automatic guided vehicle (AGV)
unmanned vehicle controlled electronically

NOTE AGV's follow a prescribed path, stopping at each machining or assembly station for automatic or manual loading and unloading of parts.

3.50
automatic identification and data capture (AIDC)
identification and/or direct collection of data into a microprocessor controlled device such as a computer system or a programmable logic controller (PLC), without manual input

3.51
automatic identification (Auto ID)
mode of identifying an item by machine (and entering the data automatically into a computer)

NOTE Usually data is automatically input via a computer. The most widely used recognition technology, at present, is probably bar code; others include, optical character recognition (OCR), magnetic ink character recognition (MICR), and radio frequency (RFID), machine vision, magnetic stripes and voice systems.

3.52
automatic storage/retrieval system (AS/RS)
high-density rack storage system with vehicles automatically loading and unloading the racks

3.53
available to promise (ATP)
uncommitted portion of a company's stock or planned production of an item, to support customer order promising.

[See also: capable to promise]

NOTE The figure is frequently calculated from the master production schedule.

3.54
available stock
stock of products or end items free to meet customer orders

3.55
available work
work that is actually in a department ready to be worked on

NOTE opposed to scheduled work which may not yet be physically on hand.

3.56
averaging
(in shipping) apportionment of the loss of a vessel, cargo or freight through unavoidable accident or through unintentional damage to the vessel or sacrifice of cargo, among the owners or insurers

3.57
B-item
item (material or product) that according to an ABC classification belongs to a group of items that represents the second largest part of the total consumption value, production value, turnover value or stocks

NOTE E.g. of the total value consumed / produced or stored.

3.58
back haul
return movement of a means of transport which has provided a transport service in one direction

3.59
back order (unfilled order)
open order or commitment for which the delivery time has passed

3.60
back scheduling (backward scheduling)
method of obtaining a production schedule by working backwards from the required due date in order to predict the latest start date consistent with meeting that due date

3.61
back flushing (post deduct)
deduction from inventory of the component parts used in an assembly or subassembly by exploding the bill of material by the production count of assemblies produced

3.62
backlog
quantity of goods still to be delivered, received, produced or issued, for which the planned or agreed date has expired

3.63
balance
(in transport) case where there is an equal tonnage traffic flow in the two directions, between provenance and destination

NOTE Ideally, the case where a loaded truck sent from provenance to destination would return fully loaded.

3.64
balance of load record
comparative loading on machines or other work centres, that is imposed by outstanding orders, at a particular moment in time

3.65
balanced product set
set of all the components needed to complete a particular assembly

3.66
balanced scorecard
set of enterprise-wide performance measures designed to drive a business towards strategic objectives

3.67
balancing work load (BW)
concept of running a manufacturing process with the goal of achieving a constant throughput time (and controlled improvement)

3.68
bar charts planning
planning process in which the activities are schematically represented by means of bars with the length of the bar representing the time and the position of the bar showing the mutual relationship between the activities.

[See also: Gantt chart]

3.69
bar code
code representing characters by sets of parallel bars of varying thickness and separation which are read optically by transverse scanning

3.70
bar coding
method of encoding data, employing a series of alternating bars and spaces of varying thickness and separation, designed to be interpreted by electronic readers

3.71
base demand
percentage of a company's demand that derives from continuing contracts and/or existing customers

3.72
base stock system
pull ordering system used at a stock point in which supplies are ordered when the echelon stock level has dropped below a certain point.

[See also: "re-order level ordering system" (B-Q system)]

3.73
batch
definite quantity of a product or a component that is treated and identified as one entity with respect to certain operations e.g. handling, processing, purchasing, production, transport.

[See also: lot]

3.74
batch operation cycle time
length of time required from the start of set-up to the end of cleanup for a production batch at a given operation. Includes set-up, production, cleanup etc.

3.75
batch production
production process where products *or* components are produced in batches and where each separate batch consists of a number of the same products or components

3.76
batch size stock
residual stock which arises because input and output batches respectively are not equal in size

3.77
batch sizing technique (lot sizing technique)
technique used in determining lot-sizes such as:

— fixed quantity; economic order quantity; least total cost (part period balancing); least unit cost; period order quantity; lot for lot (discrete order quantities)

3.78
batch splitting (lot splitting)
dividing a batch into two or more sub-batches and simultaneously processing each sub-batch on identical (or very similar) work centres

3.79
batch quantity (lot size)
number, volume or weight of products or components in a batch

3.80
belt conveyor
equipment for moving goods using a moving belt as the transport medium

NOTE 1 The belt is usually driven by a drum at one end, passing over a free-running drum at the other end. The upper porion of the belt may be supported by free-running idlers or suitable flat surfaces.

NOTE 2 This type of conveyor can be arranged for horizontal or inclined transport; the angle of slope depending on the character of the goods moved and the type of belt surface.

3.81
benchmarking
process of comparison of performances between enterprises, involving a clear understanding of current processes and open exchange of data for the purpose of improvement

3.82
Berne gauge
most restrictive loading gauge or the lowest common denominator of loading gauges on the railways of Continental Europe

3.83
bill of lots
method of tracking the specific multi-level lot composition of a manufactured item

NOTE This provides the necessary where-used and where-from relationships required in lot traceability.

3.84
bill of labour (BOL)
listing of the required capacity and key resources required to manufacture one unit of a selected item or family

NOTE 1 Often used to predict the impact of the item scheduled on the overall schedule and load of the key resources. Rough cut capacity planning uses these profiles to calculate the approximate capacity requirements of the master production schedule and/or the production plan.

NOTE 2 Compare also: bill of resources, product load profile.

3.85
bill of lading (B/L)
document which evidences a contract of the carriage by sea and the taking over or loading of the goods by the carrier, and by which the carrier undertakes to deliver the goods against surrender of the document.

NOTE 1 A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such an undertaking.

The document may have the following functions:

— receipt for goods, signed by a duly authorized person on behalf of the carriers;

— proof of title to the goods described therein;

— evidence of the terms and conditions of carriage agreed upon between the two parties

3.86
bill of materials (BOM)
list of all parts, sub-assemblies and raw materials that constitute a particular assembly, showing the quantity of each required

NOTE The list may or may not be structured to show the assembly levels pertaining to each item on the list.

3.87
bill of material processor (BOMP)
computer program for maintaining and retrieving bill of material information

3.88
bill of process
list of processes, materials, resources, tooling, energy and (bill of manufacturing) durations needed to make a product

NOTE Often used in process manufacturing and structured so that it is clear what is needed at each process on the routing and what is needed to carry out that process.

3.89
bill of resources
listing of the required capacity and key resources required to manufacture one unit of a selected item or family.

[See also : bill of labour, capacity bill of material]

NOTE Often used to predict the impact of the item schedule on the overall schedule and load of the key resources. Rough-cut capacity planning uses these profiles to calculate the approximate capacity requirements of the master production schedule and/or the production plan.

3.90
bimodal trailer
trailer which is able to carry different types of standardized unit loads,e.g. a chassis which is appropriate for the carriage of one forty foot equivalent unit (FEU) or two twenty foot equivalent units (TEU's)

3.91
bimodal transport
carriage of goods by two modes of transport, usually road and rail

3.92
bin
stackable additional loading device with a bottom and four sidewalls equipped with wheels (rollable) or suitable for handling by roller conveyors or fork lift trucks

NOTE The outside dimensions are usually suited to the basic dimensions of a pallet.

3.93
bin location record (bin location file)
record that specifically identifies the physical location where each item in inventory is stored

3.94
blanket order (bulk order)
long-term commitment to a vendor for material against which short-term releases will be generated to satisfy requirements

3.95
blend formula
type of bill of material used for the blending operation when it is only part of the process and therefore contains only some of the ingredients in the full bill of material

NOTE It will also take into account any differences in batch size of the blending operation and the production order.

3.96
block rack
storage facility for storing a number of items one behind the other in channels to achieve high density storage

NOTE For retrieval items are removed either from the side of storing (according to the LIFO principle) or from the opposite side (according to the FIFO principle).

3.97
block schedule
schedule where a period of time relatively long compared with that actually needed to carry out the operation is allocated to each operation

3.98
block stack
method of storing items with or without additional loading devices by putting them closely together in stacks on the floor with more than two rows behind each other

3.99
block train
train which runs between two different points without intermediate marshalling or without trans-shipping loading units between sets of rail wagons

3.100
blocked stock (stock on hold)
stock from which no deliveries may be made and/or where no consumption may take place until further notice

3.101
bonded goods
goods which are stored under charge of customs viz. customs seal until the import duties are paid or until the goods are taken out of the country

3.102
bonded warehouse
warehouse in which goods not yet cleared by the customs are stored until duties are paid or these goods are otherwise properly released

3.103
book inventory
accounting definition of stock units or value obtained from perpetual stock records rather than by actual count

3.104
booked ex-stock
status indicating that the delivered product quantity and value has been accounted for in the stock account of the department concerned

3.105
booked in-stock
status indicating that the received product quantity and value has been accounted for in the stock account of the department concerned

3.106
bordereau
document used in road transport, listing the cargo carried on a road vehicle, often referring to appended copies of the road consignment note

3.107
bottleneck
stage in a process which limits performance

3.108
bottom-up re-planning
(in MRP) process of using pegging data to solve material and resource availability and/or other problems

NOTE This process is accomplished by the planner (with the help of the computer system) who evaluates the effects of possible solutions. Potential solutions could include compressing lead time, cutting order quantity, and substituting material.

3.109
box pallet
pallet with or without a lid, having a superstructure of at least three fixed, removable or collapsible, vertical sides, solid, slatted or mesh, which commonly permits stacking

3.110
B-Q ordering system
see: re-order level ordering system

3.111
B-S ordering system
see: Min-Max ordering system

3.112
bracing
securing a shipment inside a carrier's vehicle to prevent damage

3.113
break bulk cargo (conventional cargo)
general cargo conventionally stowed as opposed to unitised, containerised and roll-on roll-off cargo

3.114
break-even point
point in the volume of production where the value of sales equals the cost of manufacture. Volumes below this point make a loss and above it they make a profit

NOTE A break-even point is commonly expressed graphically. It can apply to a single product, or to a group of products or to a complete plant.

3.115
break-even weight
(in air cargo) weight at which it is cheaper to charge the lower rate for the next higher weight break multiplied by the minimum weight indicated, than to charge the higher rate for the actual weight of the shipment (cargo)

3.116
break through planning
see: Hoshin planning

3.117
bridge crane
material handling equipment for overhead movement of cargo or bulk material by a trolley running on a bridge-type structure (horizontal beam)

NOTE Typical load suspension devices are forks, grasps, and magnetic or vacuum spreaders.

3.118
bridge shipment
shipment process during which a carrier receives freight for another carrier and delivers it to a third carrier, thereby dealing directly with neither the shipper nor the consignee

3.119
bucketed system
technique applicable to material requirements planning where all time-phased requirements occurring in a period or 'bucket', e.g. a week, are combined into one total requirement, phased to occur at the beginning of the period

3.120
bucket-less system
technique applicable to material requirements planning where each time-phased requirement is regarded as discrete and processed individually by the MRP system

3.121
buffer stock
stock to decouple two processes

3.122
buffer types
stock types which are used to prevent underloading in the production

NOTE Accordingly, more of these products are produced temporarily than are immediately required; the resultant stock is called the capacity loading stock (not a buffer stock). The products generally chosen as buffer types are those which sell well.

3.123
build cycle
time interval between major set ups in production

3.124
bulk cargo
unpacked homogeneous cargo poured loose in a certain space of a vessel, e.g. oil and grain

3.125
bulk order
see: blanket order

3.126
build standard (modification standard)
version of the bill of materials used to manufacture a product

3.127
bulk storage
large scale storage for raw materials, intermediates, or finished products

3.128
bulk store
store where items are held in large quantity packs

NOTE May be issued in these packs to customers or to the picking store if they are to be issued in smaller quantities.

3.129
build cycle
time interval between major set ups in production

3.130
bullwhip effect
see: Forrester effect

3.131
business chain effect
see: Forrester effect

3.132
business process re-engineering (BPR)
systematic review of the activities carried out by an enterprise to improve performance by focusing on the steps in each business process, which add value to the final customer, without regard to functional areas

NOTE BPR aims to eliminate non-value adding activities and reduce process cost and cycle time.

3.133
business resource planning (BRP)
approach to business planning which aims at complete consistency of all aspects of the business, laid down in the plans of all levels, budgets etc.

3.134
business to administration (B2A)
supply of trade information from a company to the government or customs authorities

3.135
business to business (B2B)
trade transaction using electronic communication between purchaser and supplier

NOTE Frequently the Internet or electronic data interchange (EDI) is used to communicate information between the purchaser and the supplier thus avoiding the need for written documentation.
[See: paperless purchasing.]

3.136
business to consumer (B2C)
trade transaction using electronic communication between a company and a consumer

3.137
by product
product produced as residual part of the main manufacturing process

NOTE By-products occur typically in process industries such as oil refineries and chemical plants where production of the primary product results in production of by-products at interim stages.

3.138
by product bill of material
bill of material where by-products appear

NOTE It differs little from a normal bill of material except that the by-product unit quantity may be shown as a proportion of the primary product.

3.139
C item
item (material or product) that according to an ABC classification belongs to a (large) group of items that represents the third (a small) part of the total consumption value, production value, turnover value or stocks

3.140
cabotage
1. transport of goods between two ports or places located in the same country;

2. (in road cargo) transport of cargo within or from a country other than the country where the vehicle is registered;

3. carriage of a container from an overflow area to an area specified by the owner of that container, during which time the carrier has unlimited use of the container

3.141
call-off order
instruction to a supplier to deliver from a blanket purchase order a specific quantity of goods on a specific date or within a specific period

NOTE The call-off may also specify time and place.

3.142
Camp lot size formula (Wilson lot size formula)
formula for calculating the optimum order quantity.

See also: Economic order size (EOQ).

The basic formula is:

$$\text{Quantity} = \sqrt{\frac{2(d)(c)}{(i)(u)}}$$

where

d is the annual demand;

c is the average cost of order preparation?

I is the annual inventory carrying cost percentage;

u is the unit cost

3.143
cantilever racking (Christmas tree rack)
storage facility for storing long size material in racks of fixed or movable arms overhanging on one or both sides of posts arranged in line

NOTE In case of light goods storage and retrieval can be operated manually, otherwise by fork lift trucks, rack serving units or stacker cranes.

3.144
capable to promise (CTP)
1. method of determining potential product availability throughout a product's supply chain using available to promise calculations;

2. quantity of products available as a result of capable to promise calculations.

See also: available to promise

3.145
capacity
ability, in a given time, of a resource, measured in quality and quantity

NOTE A resource can encompass an organisational unit, production, transport or other facility or an employee.

3.146
capacity buying
arrangement whereby a purchaser commits a specific amount of a supplier's resources for a period of time for the manufacture of goods required by the purchaser

NOTE The purchaser, in due course, issues a purchase order that states the quantities and delivery dates of the goods to be supplied from the committed resources.

3.147
capacity group
organisational unit in which the resources are sufficiently homogeneous to permit capacity to be meaningfully measured as a single unit, e.g. a group of similar machines or employees with similar skills

3.148
capacity requirements plan (projected load, load profile)
display by type of resource of present and future loads (capacity required), based on planned and released shop orders, and of planned capacity (available capacity), phased over a period of time

3.149
capacity requirements planning (CRP)
system that calculates time-phased capacity requirements by type in order to execute the production programme

3.150
capacity smoothing (load levelling)
see: smoothing

3.151
cargo
collection / quantity of goods (carried on a means of transport) transported from one place to another

NOTE Cargo can consist of either liquid or solid materials or substances, without any packaging (e.g. bulk cargo), or of loos items of unpacked goods, packages, unitised goods (on pallets or in containers) or goods loaded on transport units and carried on active means of transport.

3.152
cargo assembly (in air cargo)
separate reception of parcels or packages and the holding of them for later despatch as one consignment

3.153
cargo disassembly (in air cargo)
separation of one or more of the component parts of a consignment (from other parts of such consignment) for any purpose other than that of presenting such part or parts to customs authorities at the specific request of such authorities

3.154
cargo manifest (freight manifest)
list detailing all items of cargo despatched on a particular flight, vessel or vehicle

3.155
cargo type
classification of cargo carried, or intended to be carried, on means of transport, based on its general appearance

3.156
cargo type code
numeric system representing types of cargo, packages and packaging materials in trade, transport and other activities related to international trade

3.157
carousel rack (tower rack)
storage facility for storing goods in racks either movable sideways or circulating horizontally and vertically

3.158
carrier
party undertaking transport of goods from one point to another

3.159
carrier haulage
inland transport service which is offered by the carrier under the terms and conditions of the tariff and of the relevant transport document

3.160
carrying-chain conveyor
material handling equipment for horizontal or inclined movement of unit loads on circulating (endless) carrying chains

3.161
cell (manufacturing cell)
manufacturing or service unit consisting of a number of work stations and the materials transport mechanisms and storage buffers that interconnect them

3.162
cell layout
equipment configuration to support cell manufacturing

3.163
cell production
method of production (layout, planning and operation) using a self contained group of work stations that in sequence process one or a family of components, subassemblies or products

3.164
cellular pallet-wide container
pallet-wide container used in overland movements but designed to fit into a cell slot within a ship's hold

3.165
central warehouse
stock point from which other warehouses are replenished

NOTE The central warehouse may or may not undertake other functions.

3.166
certificate of conformance
signed document from a supplier to his customer, usually on a standard form that accompanies a delivery of items, which verifies that the items supplied conform to the customer's specified requirements

3.167
certified supplier
status awarded to a supplier who consistently meets predetermined quality, cost, delivery, financial, and count objectives. Incoming inspection may not be required

3.168
chain conveyor
material handling equipment for moving goods by using a continuously circulating chain as pulling structure

NOTE According to its type of construction distinction can be made between “carry-on” and overhead” chain conveyors.

3.169
change order
formal notification that a purchase order or shop order shall be modified in some way

3.170
change-over time (COT)
time required to change a work station from a state of readiness for one operation to a state of readiness for another

NOTE Change-over time may be less than the sum of breaking down and set-up times.

3.171
channels of distribution
any series of firms or individuals that participates in the flow of goods and services from the raw material supplier and producer to the final user or consumer

3.172
charter party (charter contract)
(in air cargo) contract in which the owner of a vessel or aircraft agrees to place it or part of it at the disposal of a merchant or a shipper, the charterer, for the carriage of goods from one port or ports to another port or ports for which he receives a freight per tonne cargo, or to let his vessel or aircraft for a definite period or trip for which a hire is paid

3.173
charterer
person who has signed a charter party with the owner of a vessel or an aircraft and thus hires or leases a vessel or an aircraft or a part of the capacity thereof

3.174
christmas tree rack
see: cantilever racking

3.175
clean bill of lading
bill of lading which does not contain any qualification about the apparent order and condition of the goods to be transported (The Hague rules)

NOTE It bears no superimposed clauses expressly declaring a defective condition of the goods or packaging (Resolution of the International Chamber of Shipping (ICS, 1951).

3.176
clean on board
when goods are loaded on board and the document issued in respect to these goods is clean

3.177
closed loop material requirements planning
overall system where material requirements planning is linked to other systems to provide closed loop MRP feedback of information between the planning and executing functions, thus closing the information loop

NOTE 1 Production programmes are developed through the master production scheduling and capacity requirements planning systems, and the programmes input to the MRP system that generates time-phased manufacturing and buying instructions. Purchasing and shop order systems feed back information about performance to the MRP system to enable corrective action to be taken, if necessary.

NOTE 2 Another term for closed loop system is feedback control system.

3.178
closing stock
stock of product at the end of a period

3.179
CMR (Convention relative au Contrat de Transport International des Marchandises par Route)
contract for the international carriage of goods by road

3.180
collaborative planning, forecasting, replenishment (CPFR)
business process enabling supply chain partners to coordinate plans to reduce the variance between supply and demand and share the benefits of a more efficient and effective supply chain

3.181
combined lead time
see: cumulative lead time

3.182
combined transport
1. means of transport where one (passive) transport device is carried on another (active) device which provides traction;

2. intermodal transport where the major part of the journey is by air, rail, inland waterway or sea and any initial and or final leg is carried out by road

3.183
combined transport document (CTD)
negotiable or non-negotiable document evidencing a contract for the performance and/or procurement of performance of combined transport of goods

3.184
combined transport operator (CTO)
party who undertakes to carry goods with different modes of transport

3.185
combined working cycle
working cycle of a discontinuous material handling equipment in a store where the empty return from a storage location is avoided by making a retrieval operation

3.186
commercial order
see: customer order

3.187
commercial system
systems which have an objective to achieve profit by satisfying the demand of a customer

NOTE 1 Commercial systems can deal with material goods, non-material goods (e.g. banking), projects (e.g. designing buildings), services, personnel.

NOTE 2 Commercial systems may be called business systems.

3.188
commodity
1. any article of commerce or goods shipped;

2. indication of the type of goods

3.189
common item (common part)
component or sub-assembly that is found in all products in the total range of products under consideration

3.190
common parts bill of material
type of planning bill of material that groups all common components for a product family into one bill of material structured as a pseudo bill

NOTE This bill of material can be seen as a special version of the modular bill of material.

3.191
component
uniquely identifiable product that is considered indivisible for a particular planning or control purpose

NOTE A component for one organizational group may be the final assembly of another group, e.g. an electric motor.

3.192
component offset
time by which the issue date of an individual component differs from that of the whole order

NOTE Component offset is used in cases where the duration of manufacturing operations is relatively long and not all the components are required at the start of the process.

3.193
computer aided design (CAD)
application of computers in the interactive mode for design, drafting and storing designs

3.194
computer aided engineering (CAE)
engineering process supported by computers

3.195
computer aided manufacture (CAM)
manufacture where computers are used to instruct and control production, plant and equipment

3.196
computer integrated manufacture (CIM)
manufacture where various computerised systems are linked to provide an integrated manufacturing system

3.197
computer numerically controlled machine (CNC machine)
machine whose operation is controlled by a computer programme

3.198
concurrent engineering (simultaneous engineering)
technique of time compression that overlaps the stages of designing, developing and launching a product and usually involves inter-dependent design processes being carried out simultaneously by multi-disciplinary co-operation rather than sequentially

3.199
configuration (of a product) (product configuration)
physical and functional characteristics of a product inclusive its product structure

NOTE This term also applies to data required to define, manufacture, test, install and service a product.

3.200
confirmation lead time
period of time between the moment an order is placed with a supplier (date of order release) and the moment the order confirmation is received from the supplier (order confirmation date)

3.201
confirmation order
order issued to a supplier, documenting goods or services and related terms of an order placed orally or otherwise before the usual purchase document

3.202
consignee
party described in the transport document to whom the goods, cargo or containers are to be delivered

3.203
consignment
separately identifiable amount of goods transported or available to be transported and specified in one single transport document

NOTE Consignment is part of the hierarchy of terms: goods item, shipment, consignment, combined consignment, load.

3.204
consignment note (way bill)
document prepared by the shipper and comprising a transport contract

NOTE It contains details of the consignment to be carried out to the place of loading and it is signed by the inland carrier as a proof of receipt.

3.205
consignment stock
goods located at an external customer's premises that are still the property of the supplier

NOTE Payment for these goods is made to the supplier only when they are sold or used by the external customer.

3.206
consignor (shipper)
individual or organisation that prepares or instructs the preparation of a bill of lading by which a carrier is directed to transport goods from one location to another

3.207
consolidated bill of lading
bill of lading used when goods are grouped into one large box, in a freight container

3.208
consolidation
1. combining quantitative and/or financial data to a certain level according to a particular aggregation structure

2. (in transport) grouping together of smaller consignments of goods into a large consignment for carriage as a larger unit.

3.209
constituent part
single or assembled product which is used in a higher level assembled product

[see also: component]

3.210
constraint
any element or factor that prevents a system from achieving a higher level of performance with respect to its goal

NOTE Constraints may be physical, such as machine speeds, or managerial, such as a policy or procedure or may come from the market.

3.211
consumable material
see: indirect material

3.212
consumption of forecast
process whereby a forecast is confirmed by customer orders, or other types of actual demands, as they are received

3.213
container
special box to carry freight, strengthened and stackable and allowing horizontal or vertical transfer

NOTE For the technical issues there is an ISO-standard (ISO 1496).

3.214
container manifest (unit packing list)
document specifying the contents of particular freight containers or other transport units, prepared by the party responsible for their loading into the container or unit

3.215
continuous replenishment
process by which a supplier is notified by the customer of actual sales or warehouse shipments and commits to replenishing the goods (by size, colour, and so on) without stock outs and without receiving replenishment orders

3.216
control
(in decision making) arrangements or mechanisms which ensure that processes run according to planned output

3.217
controlled store
store where receipts and issues and the quantities held of all items are continuously recorded

NOTE All issues and receipts are required to be confirmed in accordance with a plan or authorisation system

3.218
convention Internationale concernant le transport des Marchandises par chemin de fer (CIM)
international agreement, applied by 19 European railway companies, setting out conditions for international railway transport of goods and the liabilities of the carrier

3.219
convention relative au contrat de transport international de Marchandises par Route (CMR)
convention for the international carriage of goods by road, setting out the conditions of carriage and the liabilities of the carrier

3.220
conventional cargo
see: break bulk cargo

3.221
conveyor
material handling equipment for moving goods along stationary, continuous, linear paths

NOTE The main drive of driven conveyors mainly operates continuously, i.e. it neither stops for loading and unloading goods nor for buffering.

3.222
co-product
one of a set of parallel primary parent items produced on the same work order as a result of normal processing

NOTE 1 Any of these may be used as a basis for planning and control.

NOTE 2 Like by-products, they are commonly found in process industries.

3.223
corner casting
components found at the base of a container or swap body into which the twist locks of a carrying vehicle will engage for securing the unit during transit

NOTE 1 Containers also have them fitted at the top to enable lifting by a gantry or mobile crane, and to lock containers together when being stacked.

NOTE 2 For the technical issues there is an ISO-standard.

3.224
count point (pay point)
point in the supply chain where storage units physically leave the store and therefore are identified, registered and deleted from the accounts

NOTE Count points may be designated at the ends of lines or upon removal from a work centre, but most often they are designated as the points at which material transfers from one department to another.

3.225
count point back flush (key point back flush)
back flush technique using more than one level of the bill of material and extending back to the previous points where production was counted

3.226
counterbalanced lift truck
stacking lift truck fitted with fork arms (which can be replaced by another device) on which the load, either palletised or not, is put in a cantilever position in relation to the front wheels and balanced by the mass of the truck

3.227
country code
representation of names of countries (three digit number code and two letters, ISO 3166)

3.228
country of departure
country from which a means of transport is scheduled to depart or has departed

3.229
country of destination
country to which goods are (to be) transported as final country for delivery, or to which persons (intend to) travel

3.230
country of despatch (country of provenance, country whence consigned)
country from which goods are initially (to be) shipped to the importing country without any commercial transaction taken place in the intermediate countries

3.231
country of origin (origin)
country in which the goods have been produced or manufactured, according to criteria, laid down for the purposes of application of the customs tariff, of quantitative restrictions, or of any other measure related to trade

NOTE In this definition the word "country" may include a group of countries, a region or a part of a country.

3.232
crane
hoisting machine for lifting, dropping and moving goods in one or more horizontal directions

NOTE It enables intermittent moves of varying size and weight within a fixed space.

3.233
critical path
series of the successive activities in a network of activities, of which the sum of the duration determines the delivery moment of the project

3.234
critical path method (CPM)
network planning technique used for planning and controlling the activities in a project

NOTE By showing each of these activities and their associated times, the "critical path" can be determined. The critical path identifies those elements that actually constrain the total time for the project.

3.235
critical ratio
dispatching rule which calculates a priority index number by dividing the time to due date remaining by the expected elapsed time to finish the job

NOTE Typically ratios of less than 1 are behind, ratios greater than 1 are ahead, and a ratio of 1 is on schedule.

3.236
cross docking
operation in which incoming combined consignments are split (de-grouping) and sorted into shipments having the same destination (grouping) and immediately prepared for shipping and further transportation

3.237
cross trades
(in shipping) services of a vessel between nations other than then the nation in which the vessel is registered

3.238
cumulative lead time (total lead time)
summation of the lead times of all the activities on the critical path for purchasing, manufacturing and distribution of an item

NOTE Longest planned length of time required to accomplish a series of activities.

3.239
cumulative manufacturing requirements planning
planning of parts and subassemblies by exploding a master schedule, as in MRP except that the master scheduled items and therefore the exploded requirements are time-phased in cumulative form

NOTE Usually these cumulative figures cover a planning year.

3.240
curtain sides
plastic curtains that provide a swap body or trailer with strong but soft waterproof sides and can be drawn back or raised to permit side access

3.241
customer
person, department or organisation inside or outside a company to which goods and/or services are supplied

3.242
customer bill of material
translation of a customer order or demand (mostly in terms of functions) into specific master level items

NOTE This bill is used as input for the final assembly (schedule) or the shipment planning (when the system configuration is done by the customer).

3.243
customer feature
product attribute specifically ordered by the customer

NOTE Such attributes determined during manufacture are often called “options” whilst additions which are not integral with the product are normally called “Accessories”.

3.244
customer order (commercial order)
order from a customer inside or outside the company

NOTE Often referred to as an “actual demand” to distinguish it from a “forecasted demand”.
[See also: sales order.]

3.245
customer order decoupling point
point in the supply chain which provides a buffer between the customer order driven materials flow and the forecast driven materials flow

3.246
customer order lead time
period of time between issuing a supply order (request for supply) and the arrival of the corresponding delivery at the customer.

[See also: order lead time]

3.247
customer order processing
aggregate of activities performed in the commercial sector in order to optimise the execution of customers orders

NOTE These activities comprise:

— customer order registration;

— customer order clearing;

— customer order confirmation;

— invoicing.

3.248
customer service
actions and attitudes that assist the customer to derive added value from the product or service

3.249
customer service level
1. measure of the delivery performance;

2. measure for the ability to fulfil customer supply orders from the offered range of deliverable goods completely according to sorts and quantities as well as within the specified time

3.250
customised flow production
way of organising a manufacturing unit in order to make customised products in various options without intermediate stocks thus acquiring most advantages of line production

3.251
customs goods classification
classification of certain goods coded according to the relevant customs nomenclature

NOTE E.g. harmonised system.

3.252
cut-off procedure
procedure needed to make sure that the status of a physical count and the relative computer record is identical notwithstanding the time lapse

3.253
cut-off time
time up to which bookings will be accepted, or cargo will be received, to ensure that the cargo will be accepted for a specific sailing or flight or consolidation

3.254
cycle counting
stock accuracy audit technique where stock is counted on a cyclic schedule rather than once a year

NOTE Cycle counts are usually carried out on a regular, defined basis (often more frequently for high-value fast-moving items and less frequently for low-value or slow- moving items).

3.255
cycle stock
portion of stock required to meet normal production demand, excluding excess stock and safety stock

3.256
cycle time
time between subsequent initiations of a repetitive process

3.257
cyclical production
production process in which different products are produced in a fixed sequence which is regularly repeated

3.258
damped reaction
reacting to changes in demand and/or stock level in such a way that the production level is only gradually adjusted to this change

NOTE The object is to prevent as far as possible the production level from being adjusted (with all the costs this involves) to changes which later prove to have been only temporary.

3.259
dangerous goods declaration
document issued by a consignor in accordance with applicable conventions or regulations, describing hazardous goods or materials for transport purposes, and stating that the latter have been packed and labelled in accordance with the provisions of the relevant conventions or regulations

3.260
data element
unit of data that, in a certain context, is considered indivisible (ISO/IEC 2382-4)

3.261
decentralised inventory control (decentralised stock control)
decision making on stock levels exercised at each stocking location for stock keeping units at that location

3.262
decoupling point
point in the supply chain which provides a buffer between differing input and output rates

3.263
decoupling point position
position of the decoupling point determines the way in which the business is managed and controlled and how various partners communicate along the product-axis.

DP position for particular product/market combination is determined in a trade off between market requirements versus stock investment requirements, within the constraints of business characteristics such as lead time and flexibility of the supplying organisation. Five different DP positions representing five basic logistic structures cover all possible product/market situations:

— (DP-1) make and ship to stock;

— (DP-2) make to stock;

— (DP-3) assemble to stock;

— (DP-4) make to order;

— (DP-5) purchase and make to order

3.264
decoupling stock (buffer stock)
stock which serves to make two successive processes in the goods flow independent of each other to the desired extent

NOTE This includes: anticipation stock, capacity loading stock, cyclical stock, seasonal stock, batch size stock, safety stock (buffer stock) and working stock.

3.265
dedicated capacity
work centre that is designated to produce a single item or a limited number of similar items

3.266
dedicated factory
see: focused factory

3.267
de-expediting
action of lowering the priority of a job or order by setting a later completion date

3.268
de-groupage
splitting up of loads into consignments, or a consignment into shipments, or shipments into (end) items of (finished) goods

3.269
delivery
to supply and to make goods available to the customer in conformity with the conditions agreed upon in the order

3.270
delivery date
date on which purchased goods are (must be) received

3.271
delivery instruction
document issued by a buyer giving instructions regarding the details of the delivery of goods ordered

3.272
delivery lead time
time between the receipt of a customer order and the delivery of the product to the customer

3.273
delivery order
1. (in shipping) document issued by or on behalf of the carrier authorising the release of import cargo identified thereon and manifested under a single Bill of Lading;

2. (in air cargo) authorization of the entitled party for the shipment to a party other than the consignee showed on the Air Way Bill

3.274
delivery plan
plan, authorised by the commercial and technical sectors, which states per finished product the quantity per unit of time to be delivered

3.275
delivery reliability
ratio, measured over a defined period of time, between the quantity of goods delivered in the period on the date promised by the supplier and the total quantity of goods planned for delivery in that period

3.276
delivery service
(in sales) service provided to the customer from the time an order is placed until the product is delivered

NOTE Important key features of delivery service are:

— product availability;

— delivery lead time and punctuality;

— communications/documentations

3.277
delivery terms
see: terms of delivery, Incoterms

3.278
delivery time
time between ordering and delivery

3.279
demand
1. need for a particular product/ -group or component;

NOTE The demand could come from any number of sources.

2. quantity of goods required from a supplier to be delivered in a particular period or at a specific date / moment;

3. requirement for a particular product or component arising from a number of sources, internal or external

3.280
demand filter
standard which is set to monitor individual sales data in forecasting models

NOTE Usually set to be tripped when the demand for a period differs from the forecast by more than some number of mean absolute deviations.

3.281
demand management
function of recognizing and managing all independent demands for products, matching them to capacity, allowing order acceptance and monitoring fulfilment of orders

NOTE It encompasses the activities of:

— forecasting;

— order entry;

— order promising;

— branch warehouse requirements;

— inter-plant requirements;

— service parts requirements

3.282
demand pull
triggering of material movement downstream in the supply chain from any work station only when the subsequent work station (or the customer) requires it.

See also: JIT and make to order

NOTE The aim is minimise work in progress.

3.283
demand time fence (DTF)
point in time in the master production schedule that indicates a change in the ability of the business to meet a demand for an item

NOTE The DTF might be set one month before the completion date for an item, after which the production programme for that item would be frozen and no further changes allowed.

3.284
demand uncertainty
uncertainty or variability in demand as measured by the standard deviation, mean absolute value deviation (MAD) or variance of forecast errors

3.285
demountable body
loading unit equipped with landing legs, which can be used interchangeably between different road vehicles

NOTE Its ability to be left freestanding, enables the tractor unit to be released for other work.

3.286
demurrage
rate or amount payable to owner of the means of transport for failure to load or discharge within the time allowed

3.287
dependent demand
demand for items derived from the demand of other products

3.288
design change note
see: modification

3.289
design for manufacture (DFM)
see: manufacturability

3.290
design for manufacture and assembly (DFMA)
product development approach that involves the manufacturing function in the initial stages of product design to ensure ease of manufacturing and assembly

3.291
despatch note
document recording that products are available for despatch and authorising arrangements for delivery

3.292
deterministic models
models where no uncertainty is included, e.g., inventory models without safety stock considerations

3.293
deterministic requirements calculation
requirements calculation on a time basis with respect to material and components, making use of explosion based on the quantity of finished products to be produced

3.294
direct delivery
conveyance of goods directly from the vendor to the buyer

NOTE Frequently used if a third party acts as intermediary agent between vendor and buyer.

3.295
direct discharge
unloading goods from a vessel on to a railroad car, road vehicle or barge with the purpose of immediate transport from the port area

NOTE Usually occurs when ports lack adequate storage space or when ports are not equipped to handle a specific cargo.

3.296
direct material
material that becomes a part of the final product in measurable quantities

3.297
direct supply
marketing channel with no intermediaries (wholesalers and retailers) between producer and user, for which the producer assumes the responsibilities or activities normally undertaken by a third party

3.298
disbursement
physical issuance and reporting of the movement of raw material, components, or other items from a stores room or warehouse

3.299
discharge
1. unloading of a vehicle, a vessel or an aircraft;

2. landing of cargo

3.300
discrete manufacturing
method of manufacturing where products are manufactured in a non-continuous manner, e.g. automobiles, appliances, computers

3.301
discrete order
see: lot for lot

3.302
disintermediation
process of eliminating an intermediate stage in a supply chain

3.303
dispatching
detailed allocation and subsequent control of production resources to individual work orders

3.304
distribution
1. process of allocating and transporting goods to various parties;

2. part of the supply chain that is responsible for moving products from the supplier to the customer

3.305
distribution centre
warehouse for the receipt, the storage and the distribution of goods.

[See also : field warehouse.]

3.306
distribution channel
trading route by which a company distributes goods

3.307
distribution requirements planning (DRP)
stock replenishment technique in a distribution system which derives demands at upstream stock points from the aggregated demand at the immediate downstream stock points, using lead time offset and requirements netting

3.308
distribution resource planning (DRP II)
stock replenishment and capacity planning technique which adds the planning of key resources in a distribution system to distribution requirements planning

NOTE 1 It extends the MRP logic into the planning of key resources contained in a distribution system.

NOTE 2 Examples of these key resources are warehouse space, work force, money and trucks.

3.309
distribution structure
structure of the total of the distribution channels along which a product or group of products travels from the manufacturer to the customer (consumer)

3.310
distributor
business that does not manufacture its own products, but purchases and resells these products

NOTE Such a business usually has a finished goods inventory.

3.311
diversion
carrier service that permits changing the consignee and/or destination while the shipment is in route and paying the through rate from provenance to final destination

3.312
door to door transport (point to point transport, house to house transport)
transport of cargo from the premises of the consignor to the premises of the consignee

NOTE In the United States the term "point to point transport" is used instead of the term "door to door transport", because the term "house" may mean "customs house" or "brokers house", which are usually located in the port.

3.313
dock-to-stock
program by which specific quality and packaging requirements are met before the product is released

3.314
double order point system
distribution inventory management system which includes two order points

NOTE 1 The smallest equals the original order point, which covers replenishment lead time. The second order point is the sum of the first order point plus normal usage during manufacturing lead time.

NOTE 2 It enables warehouses to forewarn on manufacturing of future replenishment orders.

3.315
downstream operation
tasks subsequent to the task currently being planned or executed

3.316
down time
period of time during which a work station is not available for production due to a functional failure

3.317
drawback
refund of customs duties paid on material imported and later exported

3.318
draw-bar trailer combination
equipment consisting of a trailer drawn behind a rigid truck that has a draw-bar at the rear of its chassis

3.319
drop shipment
deliveries of shipments from a single shipper to multiple consignees along the route leading to an ultimate destination

3.320
dual sourcing (second sourcing)
selection of and working with two equivalent suppliers for a certain product.

[See also: multiple sourcing]

3.321
due date
date when purchased material or production on order is due to be available

3.322
dunnage
packaging inside a handling unit to prevent direct contact between the product and the handling unit, e.g. glass components do need dunnage.

3.323
durable goods
(in general) any goods whose continuous serviceability is likely to be many years (e.g. over 7)

3.324
dynamic batch sizing (dynamic lot sizing)
process of or techniques used in recalculating periodically the order quantities in order to adjust them for changes in requirements

3.325
dynamic storage
storage procedure with an occasional or continuous movement of storage units while being stored

3.326
earliest due date (EDD)
priority rule that sequences the jobs in a queue according to their (operation or job) due dates

3.327
early finish date (EFD)
(in project management) earliest time an activity may be completed, equal to the early start of the activity plus its duration

3.328
echelon stock
stock at a particular stock point plus all stock downstream

3.329
economic order quantity (EOQ) (economic batch size)
type of fixed-order-quantity model that determines the amount of an item to be purchased or manufactured at one time.

[See: camp lot size formula]

NOTE The intent is to minimize the combined costs of acquiring and carrying stock.

3.330
economic stock
1. (general) stock appropriated by a company, the result being that it incurs risks in this respect (a drop in price and unmarketability);

NOTE 1 This economic stock is the sum of the physical stock and the goods ordered but not yet received, minus the goods sold but not yet delivered.

2. (in stock control) physical stock of a product plus the quantity of that product ordered but not yet received, minus the quantity of that product already reserved

NOTE 2 term relating to ordering systems, e.g. B-Q system, s-S system, MRP-I system).

3.331
economic trade off (ETO)
calculations leading to a decision by which the cost increase in one system is valued by the cost (over)compensated by a decrease in another system

NOTE Only the direct relation between the decision and (company) cash flow is taken into account.

3.332
economy of scale
(in production) reduction of unit cost attributable to the distribution of fixed costs over a larger quantity of units produced

NOTE Economy of scale relates to quantity, cf. economy of scope which relates to quality.

3.333
effective date
date on which a component or an operation is to be added or removed from a bill of material or an assembly process

NOTE 1 The effective dates are used in the explosion process to create demands for the correct items.

NOTE 2 Normally, bill of material and routing systems provide for an effective 'start date' and 'stop date', signifying the start or stop of a particular relationship.

3.334
efficient consumer response (ECR)
logistics concept based on collaborative management along the supply chain, helping companies serve consumers better, faster and at less cost by working together with trading partners

NOTE The ECR principles are based on the Just-in-Time concept – inventories replaced by good information flow. The most important field of application is the FMCG sector. Manufacturer – Retailer partnership leads to mutual benefits helping serve customers in the more efficient way on one side and reducing costs on the other.

3.335
effectiveness
ratio between the real output of a system and the norm output

3.336
efficiency
ratio between the norm input of a process and the actual output

3.337
eighty-twenty rule (Pareto's law)
rule which states that in many cases approximately 80 % of the turnover (stock etc.) can be ascribed to approximately 20 % of the customers, articles or orders

[See also: ABC- analysis]

NOTE The actual ratio in a particular case can be determined by ranking the customers and products etc. in order of magnitude and then calculating what percentage of the turnover (stock etc.) corresponds to 10 %, 20 %, 30 % etc. of the customer and products etc.

3.338
elasticity of demand / supply
ratio of the percentage change in quantity demanded (supplied) to the percentage change in price

3.339
electronic business (e-business, e-commerce)
business transacted by electronic communication, particularly using internet technology

NOTE E-business is often divided into two types:

1. Business to Business (B2B) where orders and other transactions are automatically passed from the customer's computer system to the supplier's without human intervention;

2. Business to Customer (B2C) where the customer places orders or makes enquiries direct onto the supplier's Website, usually with secure credit card payment.

3.340
electronic data interchange (EDI)
1. (general) transfer of structured data in electronic form between computer systems in separate organizations;

2. (in business) transfer of structured business data by agreed message standards in electronic form between computer systems in separate organizations

3.341
electronic data interchange for administration, commerce and transport (UN/EDIFACT)
ISO application level syntax rules for the structuring of user data and of the associated service data in the interchange of messages in an open environment

3.342
electronic data interchange (EDI) message
approved, published and maintained formal description of how to structure the data, required to perform a specific business function, in such a way as to allow for the transfer and handling of this data by electronic means.

[See also: electronic data interchange]

3.343
electronic product code (EPC)
protocol for product identification based on radio frequency identification (RFID), intended to be used globally

NOTE EPC is administered by a joint venture of EAN and UCC.

3.344
end item
1. any item subject to a customer or sales forecast;

2. product sold as a component item or repair part

3.345
endorsement
transfer of the right to obtain delivery of the goods of the carrier by means of the consignee's signature on the reverse side of a bill of lading

NOTE If the name of the new consignee (transferee) is not stated, the endorsement is an open one which means that every holder of the document is entitled to obtain delivery of the goods.

3.346
engineer to order
type of product engineering in which detailed product design is first triggered by the customer order

3.347
engineering bill of material
bill of material containing data regarding product design

NOTE It is organized from a functional point of view, e.g. all items that are required to build an electrical system are grouped together.

3.348
engineering change note (ECN) (engineering change order ECO)
reference document that defines an impending change to the item(s) and the timing of the change by date, batch or serial number

3.349
enterprise resource planning (ERP)
integrated information system for the effective planning and control of all resources needed to take, make, ship and account for customer orders in a manufacturing, distribution or service company

3.350
enterprise resource planning (ERP) system
accounting-oriented information system for identifying and planning the enterprise wide resources needed to take, make, ship and account for customer orders

3.351
equilibrium point
point in a market where the demand for a product and the supply of that product are exactly equal

3.352
estimate (in planning)
overall plan indicating the direction of activities in a particular future period

3.353
estimated time of arrival (ETA)
expected date and time of arrival in a certain (air)port

3.354
estimated time of departure (ETD)
expected date and time when a certain (air)port is left

3.355
European article number (EAN)
13-digit, sequential code to identify consumer products

NOTE 1 The EAN-product code, usually represented as a bar code.

NOTE 2 The code has been designed by the European Article Number Association in Brussels which represents the National EAN Associations in the member countries.

3.356
European Article Numbering Association
international body responsible for administering the EAN-system

NOTE There are affiliates in many countries e.g. CCG in Germany, DCC in Japan, ANA in the UK. In North American the Uniform Code Council (UCC) is responsible for the Uniform Product Code (UPC), which is a sub set of the EAN code.

3.357
European article numbering (EAN) system
set of standards enabling the efficient management of global, multi-industry supply chains by uniquely identifying products, shipping units, assets, locations and services.

[See also: automatic identification]

NOTE It facilitates electronic commerce processes including full tracking and traceability.

3.358
excess stock
any stock in the system that exceeds the minimum amount necessary to achieve the desired throughput rate at the constraint or that exceeds the minimum amount necessary to achieve the desired due date performance

3.359
exempt carrier
for-hire carrier that is free from economic regulation

3.360
expected completion quantity
planned quantity of a manufacturing order after expected scrap or yield loss

3.361
expected demand
quantity expected to be consumed during a given time period when usage is at the forecast rate

3.362
expediting (progress chasing)
function of searching out and correcting conditions accounting for discrepancies between planned and actual performance

3.363
explosion
breakdown of a bill of material into the total of each of the components required to manufacture a given quantity of a higher assembly or sub-assembly

3.364
exponential smoothing
type of weighted average forecasting technique in which past observations are geometrically discounted according to their age

NOTE The heaviest weight is assigned to the most recent data. The smoothing is termed “exponential” because data points are weighted in accordance with an exponential function of their age. The technique makes use of a smoothing constant to apply to the difference between the most recent forecast and the critical sales data, which avoids the necessity of carrying historical sales data.

3.365
exposures
(in stock control) number of times per year that the system risks a stock-out

NOTE The number of exposures is arrived at by dividing the batch quantity into the annual usage.

3.366
externally disabled state
see: idle time

3.367
external set-up time
elements of a set-up procedure performed while the process is in production; the machine is running

3.368
extrinsic forecast
forecast based on factors not directly connected with the company e.g. information derived from market research and economic indicators

3.369
fabrication
manufacturing operations for making components, as opposed to assembly operations

3.370
fabrication order (batch card, run order)
manufacturing order to a component-making department authorizing it to produce component parts, defining the component, the quantity and the method

3.371
facilities
1. physical plant and equipment;

2. tools, materials, supplies, instruments, equipment and other resources available for creating the product or performing the service

3.372
factory delivery
delivery of goods by a factory whereby the goods are put at the disposal of another party, e.g. a commercial department

3.373
factory order
see: work order

3.374
factory stock
total stock of materials, components and work in progress stock in a factory (i.e. excluding finished products)

3.375
failsafe work methods
methods of performing operations so that actions that are incorrect cannot be completed. E.g. a part without holes in the proper place can not be removed from a jig, or a computer system will reject invalid numbers or require double entry of transaction quantities outside the normal range. Called also poka-yoke, mistake-proofing

3.376
family
group of items whose similarity of design and manufacture facilitates their being planned in aggregate, whose sales performance is monitored together and occasionally, whose cost is aggregated at this level

3.377
family bill of material
planning bill of material for many catalogue items of a certain product group

NOTE The percentage per catalogue item is determined by forecasting.

3.378
fast mover
product delivered or used with a high frequency or in relatively large numbers per period

3.379
fast mover area
area in a store where frequently stored and removed (transhipped) goods with short holding times are stored

3.380
fast moving consumer goods (FMCG)
consumer goods subject to rapid stock turnover

3.381
feedback
action of sending back information to a planning function from surrounding planning functions, or from the activity to be planned, as a reaction to information given at an earlier stage by this planning function (e.g. plans, estimates, procurement orders, orders, figures about actual goods movement)

NOTE As a result of this feedback adjustments can be made.

EXAMPLES:

— feedback from a lower planning level to a higher one stating that, for example, particular plans appear to be impossible to implement;

— feedback of information about quantities achieved to the various planning levels;

— feedback from a supplier to a customer stating that a particular order cannot be met in time

3.382
feeder service
short transportation lines that run from a truck line to nearby areas for the purpose of collecting and distributing freight for the main trucking operation

3.383
feeder workstation
area of manufacture whose products feed a subsequent work area

3.384
feedstock
primary raw material in a chemical or refining process normally received by pipeline or large-scale bulk shipments

3.385
field installation items bill of material
bill of material for components and/or sub- assemblies that can be fitted only when a product is being installed in a customer location

NOTE Item examples include electrical connections, piping, etc. of each component on all component levels (assemblies, sub-assemblies etc.). These items should be shown as part of the product's bill of material and coded to indicate their relationship.

3.386
field service
functions of installing and maintaining a product for a customer after the sale or during the lease field warehouse.

[See: distribution centre]

3.387
fifo
acronym for: first in, first out

3.388
fill-in order
order with a very prolonged delivery time, the intention being that it can be carried out in periods in which the available capacity is not being used, or not being fully used, for normal orders

3.389
fill rate
ratio between the number of goods / lines delivered to a customer and the total number of goods / lines ordered

3.390
final assembly (top assembly)
1. assembly to which no further parts need to be added, or the end assembling process for such a product;

2. highest level assembled product, as it is shipped to customers

3.391
final assembly bill of material
bill of material for the final assembly scheduling of customer orders, warehouse orders, interplant orders or a combination of these from end item levels

3.392
final assembly schedule (FAS)
schedule of finished products either to replenish stock of finished products for a make-to-stock product, or to finish the products for a make-to-order product

NOTE For make-to-order products, it is prepared after receipt of a customer order, is constrained by the availability of material and capacity, and it schedules the operations required to complete the product from the level where it is stocked (or master scheduled) to the finished product level.

3.393
finished good
see: finished product, end item

3.394
finished good (product) stock
stock that is available for supply to an external consumer, including items that have been supplied but not invoiced, but excluding items that have been invoiced to the external consumer

3.395
finished product (finished good, end item)
1. highest level (level 0) in a bill of material;

2. completed item produced by an enterprise for sale to a customer

3.396
finishing lead time
time that is necessary to complete the manufacture of a product after receipt of a customer order

3.397
finite capacity modelling
shop floor representation that relates forecast demand to available capacity and rebalances the shop floor schedule

3.398
finite capacity planning (finite capacity scheduling)
technique of scheduling products and components or the usage of plant and equipment or both; based upon work orders or rate of use, while never exceeding capacity limits in a given period

3.399
finite loading
planning technique involving automatic shop priority revision in order to level load, operation by operation

NOTE Conceptually the term means putting no more work into a work centre than the work centre can be expected to execute.

3.400
firm offer
written offer to buy or sell goods that will be held open for a stipulated period

3.401
firm planned order (FPO)
planned order that can be fixed in quantity and time

3.402
first-expires, first-out (FEFO)
1. method of valuing stocks assuming that the stock with the oldest expiry date is consumed first;

2. (with regard to storage) method whereby the goods carrying the oldest expiry dates are delivered (sold) and/or consumed first

3.403
first-in, first-out (FIFO)
1. method of valuing stocks assuming that the oldest stock is consumed first;

2. (with regard to storage) method whereby the goods which have been longest in stock are delivered (sold) or consumed first

3.404
fixed interval reorder system
periodic reordering system where the time interval between orders is fixed, such as weekly, monthly or quarterly, but the size of the order is not fixed and orders vary according to usage since the last review

NOTE This type of stock control system is employed where it is convenient to examine stock levels a fixed time cycle, such as in warehouse control systems, in systems where orders are placed mechanically, or for handling stocks involving a very large variety of items of items under some form of clerical control.

3.405
fixed location storage
method of storage in which a relatively permanent location is assigned for the storage of each item in a storeroom or warehouse

3.406
fixed order quantity
batch-sizing technique in MRP or stock management that will always cause planned or actual orders to be generated for a predetermined fixed quantity in MRP, or multiples thereof if net requirements for the period exceed the fixed order quantity

3.407
fixed order quantity system
stock control method where the size of the order is fixed, but the time interval between orders depends on actual demand

NOTE 1 The practice of ordering a fixed quantity when needed assumes that individual stock levels are under constant watch.

NOTE 2 This system consists of placing an order of a fixed quantity (the reorder quantity) wherever the amount on hand plus the amount on order falls to or below a specified level (the order point or reorder point).

3.408
flexibility
ability of the manufacturing system to respond quickly, in terms of range and time, to external or internal changes

3.409
flexible machine centre (FMC)
automated system, usually comprised of computerized numerical control machines with robots loading and unloading parts conveyed into and through the system

NOTE Its purpose is to provide quicker throughput, change-overs, set-ups etc., to manufacture multiple products.

3.410
flexible manufacturing system (FMS)
manufacturing process designed so that the production line may be rebalanced often

NOTE FMS rapidly matches output to changes in demand. It involves mixed-model scheduling, multi-skilled operators, standardization of equipment for quick changeover times, and design of the production line to allow workers to do more than one job and to cut down on transportation time between workstations.

3.411
flexible programming
method of programming where the year is divided into equal short time periods and new short term sales and production programmes are prepared at the beginning of each period

3.412
float
1. amount of work-in-process stock between two manufacturing operations, especially in repetitive manufacturing;

2. time available for an activity or unbroken sequence of activities in addition to their duration

3.413
floating order point
order point that is responsive to changes in demand and/or changes in lead time

3.414
floor stocks
stocks of inexpensive production parts held in the factory, from which production workers can draw without requisitions

3.415
floor store
defined (marked) storage site on the floor where storage units are stored individually or in stacks and replenished once used

3.416
flow (in goods movement reporting)
quantity of goods passing one measuring point in a given period of time

NOTE This can be a single batch of goods passing at a moment of time. It can also be the accumulation of quantities of goods passing in a given period of time.

3.417
flow control
specific production control system that is based primarily on setting production rates and feeding work into production to meet these planned rates, then following it through production to make sure that it is moving

NOTE Flow control has its most successful application in repetitive production.

3.418
flow control system
ordering system in which requirements are calculated from production programmes based on sales forecasts

3.419
flow shop
job shop production process in which the routing of products is unidirectional through a series of standard operations

NOTE Usually a flow shop is found in high volume production.

3.420
flow storage
method of storing unit loads in channels of stationary racks enabling horizontal movement of the goods by gravity or motor driven conveyors, gravity driven rolling bases and rolling pallets or driven satellite cars

NOTE Storage and retrieval take place at the opposite sites of the channel (FIFO). If stored goods are gravity driven their storage points are always on a higher level than their retrieval points.

3.421
flow store (passage store)
type of a store where storage units enter at one side and leave at the opposite side (on the same level or in separate layers one above the other)

3.422
focused factory (dedicated factory)
plant established to focus the entire manufacturing system on a limited, concise, manageable set of products, technologies, volumes, and markets precisely defined by the company’s competitive strategy, technology and economics

3.423
forecast
estimate of future demand

3.424
forecast consumption
process of replacing the forecast with customer orders, or other types of actual demands, as they are received

3.425
forecast horizon
period of time into the future for which a forecast is prepared

3.426
forecast period (forecast interval)
time unit for which forecasts are prepared, such as week, month or quarter

3.427
forecasting method
method which is used in forecasting future events

NOTE Three basic forms can be distinguished:

— qualitative techniques (e.g. the Delphi technique);

— techniques based on times series analysis and extrapolation;

— casual models which take account of environmental influences such as economic factors and the development of the competitive position, in addition to the foregoing method.

3.428
fork lift truck (FLT)
floor-based materials handling equipment for horizontal movement, lifting and stacking of unit loads by driving two forks under the additional loading device or by using load specific attachments (e.g. bale tongs or spikes) if inserting the forks under the loading device is not possible

3.429
Forrester effect (amplification effect, bullwhip effect, business chain effect)
amplification of demand fluctuations as orders progress upstream in the supply chain

NOTE This effect is named after Jay Forrester, Massachusetts Institute of Technology (MIT) who reported it in 1960. Forrester, J.W. Industrial Dynamics, Cambridge MA, MIT Press, 1961.

3.430
forward scheduling
scheduling technique where the scheduler proceeds from a known start date and computes the completion date for an order usually proceeding from the first operation to the last

3.431
forwarder
party arranging the carriage of goods including connected services and/or associated formalities on behalf of a shipper or receiver

NOTE E.g. freight forwarder, customs forwarder.

3.432
forwarding
action of taking care of the despatch of shipments and the consolidation of information related to these shipments and their transport and, in case of international transport, informing the national body for control of exports

3.433
forty foot equivalent unit (FEU)
unit of measurement equivalent to one forty foot shipping container

3.434
fourth party logistics (4PL)
outsourcing of the design, planning / control and operational activities of a complete distribution or supply chain network to a specialised company

3.435
free float
total time by which an activity may be delayed or extended without delaying the start of any succeeding activity or the total project time

NOTE Obtained by deducting the duration of that activity from the difference between the earliest possible starting time of the following activity and the earliest possible starting time of the activity itself.

3.436
free (available) stock
stock available to service immediate demand

3.437
freight
goods being transported from one location to another

3.438
freight costs
costs incurred by the shipper in moving goods, by whatever means, from one place to another under the terms of the contract of carriage

NOTE In addition to transport costs, this may include such elements as packing, documentation, loading, unloading, and insurance (to the extent that they relate to the freight cost).

3.439
freight forwarder
party / intermediary that collects (small) shipments from shippers, consolidates these shipments into consignments, and uses a basic mode to transport these consolidated shipments to a destination where the next party delivers the shipment to the consignee

3.440
full container load (FCL)
container stuffed or stripped under responsibility and for account of the shipper or the consignee

NOTE For operational purposes a full container load (FCL) container is considered a container to which no cargo can be added during the time it is transported under FCL conditions.

3.441
full pegging
ability of a system to automatically trace requirements for a given component all the way up to its ultimate end item, customer, or contract number

3.442
functional layout (process-oriented layout)
type of layout where the process-oriented machines and/or the departments where the same or similar operations are carried out, are combined in one group

NOTE The functional layout is used mainly in factories engaged in job shop production and the production of small series.

3.443
Gantt chart
bar chart used as a means of control on which work planned and work done are represented, showing their relation to each other and to time

NOTE Named after Henry L. Gantt, 1917.

[See also: bar charts planning]

3.444
gantry crane
straddling a road-rail or ship-shore interchange, the gantry structure on running tracks allows forward or backward motion, whilst the crane itself provides lateral mobility

3.445
general cargo
cargo, consisting of goods, unpacked or packed, for example in cartons, crates, bags or bales, often palletised, but not in shipping containers

NOTE General cargo can be shipped either in break bulk or containerised

3.446
general stores
see: suppliers

3.447
goods
1. (in economic sense) all material and non-material things (e.g. products and services) which can be used to satisfy needs;

2. (in planning) products suitable to be moved through the business chain;

3. (in transport) whole or part of the cargo received from the shipper, including the equipment supplied by the shipper

3.448
goods flow
direction and path of the movement of goods and sequence of placements of those goods in a supply chain

3.449
goods in transit (sailing stock)
goods which have departed from the initial loading point and not yet arrived at the final unloading point

3.450
goods item
separately identifiable quantity of products of a single product type, which is recognized for some period of time as a subject of actual or potential business

NOTE 1 This entity is 'born' when the products are separately identified, normally this is when the quantity is specified.

NOTE 2 Whenever a goods item is split, merged with another item or replaced, a new goods item is born; the original goods item only 'dies' when it is deleted from the info-system. A goods item may not be split or merged into separately recognizable goods items.

NOTE 3 Different statuses per goods item can be specified by different associated quantities (attributes) (e.g. quantity advised, quantity received etc.).

NOTE 4 A change of quantity due to a change of unit of measure does not mean a different goods item.

3.451
goods movement
goods flow of a particular product or group of products expressed in quantitative or financial terms

[see also: flow]

3.452
grappler arms
hanging arms of a mobile or gantry crane used for lifting swap bodies sometimes called pincers

3.453
gross requirements
1. (general) total requirements to meet demand for materials for the production process, consisting of the design requirements and any additional requirements

2. (in MRP) total of independent and dependent demand for a part or an assembly prior to the netting of on hand inventory and scheduled receipts

3.454
gross weight
1. (in transport) weight (mass) of goods including packing, but excluding the carrier's equipment expressed in whole kilograms;

2. (in air cargo) weight of a shipment including materials necessary for blocking etc.

3.455
group layout
method of dividing a factory into groups of employees and production resources in such a way that each separate group can produce all or most products belonging to a particular category

3.456
group technology (GT)
method of factory layout, planning and organisation which identifies groups of processing facilities that are able to make a family or families, of parts, assemblies or products without the use of external operations, to achieve low throughput time

3.457
groupage
1. collection of several shipments and the formation of one consignment thereof;

2. (in road transport) collection of several consignments and the formation of one load thereof

3.458
handling service
service concerning the physical handling of cargo

3.459
handling out
see: outward handling

3.460
handling unit
see: unit load

3.461
handover shipment
shipment which has been forwarder by one freight forwarder but has to be transferred to an other forwarder at the consignee stipulation for final custom clearance and delivery, in accordance with the Incoterms

3.462
hard allocation
allocation of material to a manufacturing order or a customer order from stock on hand or on order that not only allocates a quantity but also allocates the material from a specific lot or delivery

3.463
hard automation
use of specialized machines to manufacture and assemble products

3.464
harmonic smoothing
approach to forecasting based on fitting some set of sine and cosine functions to the historical pattern of a time series

3.465
harmonized system (HS, harmonized commodity description and coding system)
international product nomenclature, developed under the auspices of the World Customs Organisation (WCO) (former Customs Co-operative Council, CCC), which is to form the basis throughout the world for the classifications, description and coding of goods for customs, statistics and transport purposes

NOTE The nomenclature comprises the headings and subheadings and their related numerical codes, the section, chapter and subheading notes and the general rules for the interpretation of the harmonized system.

3.466
haulage
road carriage of cargo between named locations

3.467
hedge
(in master scheduling) a scheduled quantity to protect against uncertainty in demand or supply

3.468
heel
in the process industry, an item used in the manufacture of itself; e.g. in the manufacture of yogurt, the ingredients will include the parents as well as the components

3.469
heijunka
(Japanese) in the Just-In-Time philosophy, an approach to level production throughout the supply chain to match the planned rate of end product sales

3.470
high bay rack
facility for storing unit loads with additional loading devices on supporting beams or consoles fitted to the pillars of 12 m minimum height

NOTE Storage and retrieval are realised by rack serving units or high rack stackers, seldom by stacker cranes.

3.471
high bay store
type of a store where high bay racks, roof element and wall panels form a unitised structure

3.472
high cube container
container of standard ISO length and width but with extra height of 2,9 m instead of 2,44 m

3.473
high rack stacker (narrow aisle stacker)
kind of a fork lift truck for operation in high bay stores of which the forks are able to swing to the right or the left and to extend into the racking to place or extract pallets

3.474
hoist
overhead materials handling equipment for lifting goods, moving them in a hanging position through the space and putting them down

3.475
hold order
order directing that certain operations or work be interrupted or terminated pending a change in design or other disposition of the material

3.476
horizon
(in planning) period between the present and the most distant time in the future to which a plan or forecast relates

3.477
hoshin planning (breakthrough planning)
(Japanese) strategic planning process in which a company develops up to four vision statements that indicate where the company should be in the next five years

3.478
house air waybill
document issued by a consolidator for each separate air consignment

NOTE It performs the same function as an air waybill.

3.479
house bill of lading
freight forwarder's document which performs similar functions to the bill of lading but it is not a negotiable document of title, and is used mainly as a control for the goods within the freight forwarder's own service system

3.480
housekeeping
manufacturing activity of identifying and maintaining an orderly environment for preventing errors and contamination in manufacturing process

3.481
hybrid manufacturing (mixed mode manufacturing)
style of manufacturing in which the manufacturing environment enables the use of a combination of discrete, repetitive and/or process manufacturing styles

3.482
hybrid stock system
stock control system combining features of the fixed order quantity system and the fixed interval reorder system

3.483
identifier
(in EDIFACT) character or group of characters used to identify or name an item of data and possibly to indicate certain properties of that data

3.484
idle time (external disabled state)
period of time when a work station / resource is available for production but is not utilised due to shortage of tooling, material, operators etc.

3.485
implosion
1. compression of detailed data into a summary-level record or report;

2. tracing of a usage and/or cost impact from the bottom to the top (end product) of a bill of material employing "where-used" logic

3.486
inbound stock point
defined location next to the place of use on a production floor

3.487
incidental demand (abnormal demand)
unanticipated change in the level of customer orders

3.488
incoming goods
(quantity of) goods delivered to a customer by his suppliers in a particular time period, expressed in quantitative or financial terms

3.489
Incoterms
set of international rules, issued by the ICC (International Chamber of Commerce) for the interpretation of the chief terms of delivery used in foreign trade contracts;

[See: terms of delivery, delivery terms]

NOTE The Incoterms define the rights and obligations of the seller and the buyer with respect to:

— party responsible for packing, transport, transport insurance, transport/customs documentation;

— party which pays for the above mentioned activities;

— transfer of the risk (at which point and time the risk passes from the seller to the buyer)

[See Annex C for definitions]

3.490
indented bill of material
form of multilevel bill of material exhibiting the highest level subassemblies (parents) closest to the left hand margin of the list and all the components (children) of these parents indented towards the right hand margin

NOTE All subsequent levels of components are indented farther to the right. If a component is used in more than one subassembly within a given product structure, it will appear more than once, under every subassembly where it is used.

3.491
indented where-used
listing of every parent item, and the respective quantities required, as well as each of their respective parent items, continuing until the ultimate end item or level 0 item is referenced

NOTE Each of these parent items are ones which call for a given component item, in a bill of material file. The component item is shown closest to the left margin of the listing, with each parent indented to the right, and each of their respective parents indented even further to the right.

3.492
independent demand
demand that is unrelated to the demand of other products, e.g. demand for finished goods, parts required for destructive testing and service parts requirements are examples of independent demand

3.493
independent float
float of an activity obtained by deducting the duration of that activity from the difference between the earliest possible starting time of the following activity and the last possible starting time of the activity itself

3.494
identification point
point in the supply chain where unit loads are identified by reading identifiers like e.g. barcode labels to register them and link them to further data (e.g. about the kind and quantity of load)

3.495
indirect material (consumable material)
material used in a product but not readily chargeable to the product and usually treated for accounting purposes as an item of overhead expenditure, e.g. welding rod

3.496
infinite capacity scheduling (infinite capacity planning)
allocation of work to work centres in the time period required regardless of the capacity available to perform this work

3.497
infinite loading
calculation of the capacity required at a work centre in time periods required regardless of the capacity available to meet the load

3.498
information flow
directed transmission of information from the transmitter to the receiver to support the planning, execution and reporting of the supply chain

3.499
ingredient
(in process industry) the raw material or component of a mixture

3.500
inland waterways bill of loading
transport document made out to a named person, to order or to bearer, signed by the carrier and handed to the sender after receipt of the goods

3.501
in process stock (in process inventory)
see: work in process

3.502
in transit
1. status of goods being moved between locations;

2. (customs) status of goods or persons between the outwards customs clearance and inwards customs clearance

3.503
input
1. (general term) resource required for a process;

2. (in manufacturing) work arriving at a work centre or production facility

3.504
input/output analysis
analysis of the mutual relationships between variables which are decisive for the production processes and distribution processes in a production centre, distribution centre, branch of industry, sector and/or the total company with regard to the incoming and outgoing goods required for the processes

3.505
input/output control
technique for capacity control where actual output from a work centre is compared with the planned output developed in the capacity requirements planning

NOTE The input is also monitored to see if it corresponds with plans so that work centres will not be expected to generate output when work is not available.

3.506
inside exchange of die (IED)
see: single minute exchange of die (SMED)

3.507
instantaneous receipt
receipt of an entire batch quantity in a very short period of time

3.508
integrated logistic support (ILS)
systematic approach applied to simultaneous engineering and acquisition of product(s)/equipment and related logistic support, in order to provide the user with a desired level of availability and an optimum life cycle cost, and to maintain this level through the entire life cycle

3.509
interactive scheduling
computer scheduling where the process is either automatic or manually interrupted to allow the scheduler the opportunity to review an change the schedule

3.510
intermediate stock
stock which serves to compensate for disparities in the speeds of the successive operations in the production process and the differences in the sequence in which the products are dealt with in each operation

NOTE The intermediate stock is formed between various production phases in a company. It can have the function of batch stock, cyclical stock and safety stock.

3.511
inter-modal transport
movement of goods in one and the same loading unit or vehicle which uses successively several modes of transport without handling of the goods themselves in changing modes

3.512
inter-modal transport unit (ITU)
transport unit which may be a container, swap body, semi-trailer or road-rail trailer suitable for inter-modal transport

3.513
internal set-up time
elements of a set-up procedure performed while the process is not running.

See: single minute exchange of die, SMED

3.514
internal transport
transport of goods within the limits of an operational unit, e.g. inside the factory, warehouse, groupage centre, or other premises

3.515
interoperation time
time between finishing one operation and the start of the next

3.516
interplant demand
one plant’s need for a part or product that is produced by another plant or division within the same organisation

3.517
in-transit stock (stock in transit)
materials moving between locations, usually separated geographically, e.g. finished goods being shipped from a plant to a distribution centre

3.518
intrinsic forecast
forecast based on internal factors, such as an average of past sales

3.519
inventory
see: stock

3.520
inward processing relief (IPR)
relief of import duties on parts/components on the condition that the final product including those or similar parts /components are being exported

3.521
issues
see: withdrawals

3.522
issue cycle
time required to generate a requisition for material, pull the material from an inventory location, and move it to its destination

3.523
item
any unique manufactured or purchased part, material, intermediate, subassembly, or product that can be individually considered

3.524
item record (item master record, part master record, part record)
the master record for an item

NOTE An item record typically contains identifying and descriptive data and control values (lead times, batch sizes) and may contain data on inventory status, requirements, planned orders and costs. Items records are linked together by bill of material records (or product structure records), thus defining the bill of material.

3.525
job order
see : work order

3.526
job shop
1. production unit that is organized for producing as a rule small quantities of products according to customer orders

2. production process where:

— routing of the various products is always different;

— product undergoes a subsequent processing phase as soon as the relevant production resource is available.

NOTE Generally, the products are produced only once in small or larger quantities.

3.527
job shop production (one-off production)
process involving the production of a small quantity of products which have to satisfy the wishes of an individual customer and which, in principle, are ordered only once

NOTE The production for this type of demand generally takes place in a department with a functional lay-out.

3.528
joint replenishment
co-ordinating the batch sizing and order release decision for related items and treating them as a family of items

NOTE The objective is to achieve lower cost because of ordering , set-up, shipping, and quantity discount economies. This term applies equally to joint ordering and to composite part fabrication scheduling.

3.529
just-in-time (JIT)
minimization of work-in-progress and of finished stock by the control of inter-process movement in the supply chain by a pull system based on reduced batch size

NOTE In the broad sense JIT is an approach to achieve excellence based on the continuing elimination of waste (waste being considered as those things which do not add value to the product).

3.530
kaizen
(Japanese) principle of continuous improvement of business performance involving everyone – managers and workers

NOTE This word is protected in certain countries

3.531
kanban
(Japanese) pull system used at a stock point in which a supply batch is ordered only when a previous batch is withdrawn

NOTE Translated from Japanese the word "kanban" means "card", literally it means "billboard" or "sign"

3.532
kangaroo
inter-modal transport system whereby a lorry trailer is carried on trunk routes on a railway wagon

3.533
key performance indicator (KPI)
variable measured against a norm, related directly to the objectives of logistics of the company

[See also: Logistics key performance indicator.]

3.534
key point back flush
see: count point back flush

3.535
kit
components of a parent item that have been pulled from stock and made ready for assembly

3.536
kitting (staging)
pulling material of an order from stock before the material is required

NOTE This action is often taken to identify shortages.

3.537
knock down kit
individual product presented as a set of sub-assemblies packed together for shipment to a customer for final assembly

3.538
labelling
operation of attaching an identifier, e.g. a barcode to an item

3.539
labour productivity
ratio of the quantity of goods produced in a particular period (output) and the quantity of work required to produce these goods (input) in that period

NOTE The labour productivity indicates the quantity of a particular product produced per unit of labour.

3.540
last-in, first-out (LIFO)
1. valuation principle that assumes that the newest stock of a certain product is consumed or sold first

NOTE In this way the stock is valued at prices from the past, while the consumption is valued at relatively up-to-date prices. (See FIFO.)

2. (with regard to storage) method whereby the goods which have been in stock for the least time

3.541
late order
see: past due order

3.542
latest start date
latest date at that an operation can be started to meet the due date of the order

3.543
launch sequence scheduling (LSS)
method of operation scheduling, used with group technology and period batch control, based on planning the sequence of jobs for first operation machines, coupled with processing on the other machines in strict arrival sequence

3.544
layout
1. physical arrangement of resources, activity centres and passages

2. arrangement of columns, data, etc. on a document (See UNR 1)

3.545
lead time
time between the initiation of a process and its completion

NOTE There are many processes and sub-processes for which a lead time may be estimated or measured.

3.546
lead time offset
(in MRP) date when a planned order should be released to achieve the planned receipt date

3.547
lead time stock
stock which is carried to cover demand during the lead time

3.548
lean manufacturing (lean production)
approach to manufacturing, development and operations aiming to apply the disciplines of kaizen, JIT, and TQC to each stage in the manufacturing process including product and process development and customer service

3.549
least total cost
dynamic batch sizing technique that calculates the order quantity by comparing the carrying cost and the set-up (or ordering) costs for various batch sizes and selects the batch size where these costs are most nearly equal

3.550
less than container load (LCL)
container stuffed and stripped for account and risk of the carrier

NOTE For operational purposes a less than container load (LCL) container is considered a container in which multiple consignments or parts thereof are shipped.

3.551
less than truck load (LTL)
quantity or volume which does not fill a standard truck

3.552
level
position in the hierarchy of the product structure

3.553
level of service
measure (usually expressed as a percentage) of the extent to which demand is satisfied from stock or by the current production schedule

3.554
level schedule
(in traditional management) production schedule or master production schedule that generates material and labour requirements that are as evenly spread over time as possible

3.555
life cycle assessment (LCA)
derivation of the life cycle cost concept, including evaluation of the social costs/benefits generated by the product during its life cycle

3.556
life cycle cost (LCC)
costs associated with the product's life cycle

NOTE These include all costs involved in acquisition (research & development, design, production & construction, and phase-in), operation, support and disposal of the product.

3.557
line balancing
1. assignment of elemental tasks each with a specified time requirement per unit of product and a sequence relationship with the other tasks, to work stations in an assembly line, to minimize the number of work stations and to minimize the total amount of idle time at all stations

2. technique for determining the product mix that can be run down an assembly line to provide a fairly consistent flow of work through that assembly line at the planned line rate

3.558
line of balance
technique used for planning and controlling the production of batches of special products that are to be delivered progressively over a period of time

NOTE The plans showing the output required in each period of the production, from each progressive stage of the processing, are illustrated by line of balance charts.

3.559
line layout
type of layout of a factory or department in which machines and other production resources which are needed for the production of a particular product, are arranged in the sequence in which they are used

NOTE The line layout is used in factories with continuous production or with the production of large series, or families of small series.

3.560
line production
production process in which:

— machines and other resources required for manufacturing a particular product are set up in the sequence in which they are used (line lay-out);

— products go through the various phases without interruption.

NOTE Use of line production is only possible if the following conditions are satisfied:

— routing of a series of products made in succession is practically the same

— processing times for the successive operations on the various products shall be practically the same, so that all the products in the line always move up one place at the same time.

3.561
line stacking
method of storing items with or without additional loading devices in rows consisting of up to two lines directly on the floor

NOTE There is direct access only to the storage units in the top layers of all stacks. Access to storage units in layers below this is restricted (LIFO), but it can become possible after restacking.

3.562
liner conference
group of two or more vessel-operating carriers, which provide international liner services for the carriage of cargo on a particular route or routes within specified geographical limits and which has an agreement or arrangement, whatever is applicable, within the framework of which they operate under uniform or common freight rates and any other agreed conditions with respect to the provisions of liner services

3.563
liner in, free out (LIFO)
transport condition denoting that the freight rate is inclusive of the sea carriage and the cost of loading, the latter as per the custom of the port, and excluding the cost of discharging cf. FIFO

3.564
load
1. (in transport) quantity or nature of whatever is being carried

NOTE This term normally refers to transport by truck.

2. amount of work imposed by a given order or set of orders, on a particular work centre.

3.565
load factor (utilisation)
ratio of the actual load of a production resource (group of production resources) or a department (i.e. store / warehouse) and the available capacity during a particular period

NOTE 1 It indicates the extent to which the capacity is used during a particular period.

NOTE 2 In general terms utilisation is defined as: the ratio between the actual input and the norm input of a transformation process.

3.566
load levelling (capacity smoothing)
see: smoothing

3.567
load planning
planning of distribution of the required capacity over the available capacity of the individual employees, production resources, and departments, etc.

3.568
load profile (product load profile)
display of future capacity requirements based on planned and released orders over a given span of time

3.569
load suspension device
peripheral facility or add-on device of material handling equipment for loading goods that often can be changed without any special reconstruction and installation activities

3.570
loading gauge
profile above the rail or road tracks through which a rail or road vehicle and the load need to pass. It is limited by the size of tunnels, bridges, and line side structures such as platforms, buildings and signalling equipment

3.571
loading stock (outgoing stock)
stock comprising all the goods for which delivery instructions have been issued and which have not yet been invoiced or have not yet actually departed

NOTE Actual departure date is assumed to coincide with invoice date.

3.572
loading unit
receptacle for containing goods throughout their entire journey length. It may include therefore an ITU or a road vehicle's carrying equipment (box van or trailer)

3.573
load-on / load-off (lo/lo)
loading and unloading of ITU using lifting equipment

3.574
location
1. any named geographical place, recognised by a competent national body, either with permanent, frequently used, facilities for goods movements, associated with international trade or proposed by the government concerned or competent national or international organisation for inclusion in the UN/LOCODE. (UNR 16)

2. point or area identifiable by a reference such as an address, coordinates, (a code for) a proper name plus further detail or (a code for) a proper name used in trade

3.575
logistics
planning, execution and control of the movement and placement of people and/or goods and of the supporting activities related to such movement and placement, within a system organized to achieve specific objectives

NOTE Logistics is used as a noun; or as an adjective; a logistician is a person involved in logistics as a whole.

3.576
logistics channel
network of intermediaries engaged in transfer, storage, handling and communications functions that contribute to the flow of goods

3.577
logistics costs
costs related to the logistics activities

3.578
logistics key performance indicators
comprehensive but limited set of measurements against a standard or norm that provide feedback on the progress of the logistics plans and the execution of the main functions concerned in the management of the goods flow (marketing/sales, manufacturing and logistics) and that identify the need for investigation and corrective action where there is a shortfall

3.579
logistics management
function of setting strategies for, planning, implementing and controlling the flow and storage of raw materials, in process stock, finished goods, and related information between the point of origin and the point of consumption for the purpose of meeting customer requirements

3.580
logistics manager
manager responsible for the logistics function of an organizational unit

3.581
logistics support analysis (LSA)
iterative analytical process, as part of the product engineering process, which identifies and evaluates logistic support for a product, and which assists in:

— defining support requirements that are related optimally to design and to each other;

— modifying the design to improve support;

— acquiring the required support; and

— providing support during operation

3.582
logistics unit
1. object of both logistics planning and operations. A logistic unit may be a bare product, a (retail packed) sales item, a combination of products of different sales items, a standard packing unit, etc.

2. node in the flow of goods, mostly a store or a warehouse

3.583
lost time factor
complement of utilization, that is one minus the utilization factor

3.584
lot
quantity of products produced at the same time and under the same conditions

NOTE A lot is distinguished from a batch in that all the items within a lot are known to share the same materials and manufacturing conditions.

3.585
lot for lot (discrete order)
batch sizing technique which generates planned orders in quantities equal to the individual net requirements in each period

3.586
lot size
see: batch size

3.587
lot size stock
see: batch stock

3.588
lot traceability (traceability)
facility to record the consumption, production, status and location of materials by lot identity or serial number through all or some of the processes from initial purchase to final customer delivery, and the ability to retrieve this information either forwards, from lower build levels upwards, or in reverse, from higher build levels downwards, or from any individual process

NOTE Traceability could be required to satisfy recallability (q.v.) requirements in certain industries.

See also: serial number traceability

3.589
low level code
number that identifies the lowest level in any bill of material at which a particular component appears

3.590
low loader wagon
rail wagon with a low loading platform specially built to carry inter-modal transport equipments

3.591
lumpy demand
quantities and frequency of demand that are not consistent or predictable

3.592
machine time
see: operation time

3.593
machining centre
machine capable of performing a variety of material removal operations on a part, usually under numerical control

3.594
main store
store from which other stores are supplied with regard to particular materials, components and products

3.595
make and ship to stock
type of manufacturing in which products are made and shipped in anticipation of a customer order

3.596
make or buy
process of making a choice between producing a product oneself or buying it

3.597
make to order
type of manufacturing in which conversion is started only when a customer order is received

3.598
make to stock
type of manufacturing in which products are made in anticipation of a customer order

3.599
manifest
(in transport) document which lists complete specifications of the goods loaded for transport to various destinations by a vessel or other means of transport

[See also: UN Recommendations.]

NOTE 1 As a rule cargo manifests are drawn up by the agents in the ports of loading and are based upon the Bills of Lading.

NOTE 2 For shipping a manifest represents a accumulation of bills of lading for official and administrative purposes.

3.600
manufacturability (design for manufacture, DFM)
measure of the design of a product taking into consideration its ease of manufacture within given facilities

3.601
manufacture (to)
making of products (parts, components, assemblies, semi-finished products and finished products)

NOTE Mostly the term manufacture is used specifically for the physical operations to make a product.

3.602
manufacturing layout
spatial arrangement of manufacturing resources in a factory or factory department

NOTE It may be functional layout, a line layout, a cell layout or a group layout.

3.603
manufacturing lead time (manufacturing throughput time, MTT)
period of time between the release of a work order and its completion

NOTE Included here are waiting time, set-up time, run time, move time, inspection and put away time.

3.604
manufacturing order
see: work order

3.605
manufacturing process
series of activities performed upon material to convert it from the raw or semi-finished state to a state of further completion and a greater value

3.606
manufacturing resource planning (MRPII)
materials and capacity planning technique which adds capacity checks, production planning and demand management to MRP

3.607
manufacturing throughput time (MTT)
see: manufacturing lead time

3.608
maritime container
container conforming to ISO standards that enable it to be used in a cellular ship

NOTE Most maritime containers conform to International Standards Organisation (ISO) standards.

3.609
marshalling area (shipping area)
area in a store for the external delivery of storage goods

NOTE It consists of areas and spaces for placing goods ready according to customers and tours (orders) and loading them. In addition, operations to prepare goods for being shipped, to pack or to build shipping units may be located there as well.

3.610
marshalling into singles
operation to create a distance between goods or unit loads that are in a close succession within an accumulation or flow

3.611
mass customisation
methods of manufacturing standard goods that allow the goods to be tailored on order to individual specifications and within time scales usually associated with mass production

3.612
mass production
high-quantity production characterized by specialization of equipment and labour

3.613
master engineering plan
high-level programme showing the timing of release by design engineering of new product designs and major design revisions to existing products

3.614
master manufacturing plan
high-level programme showing in general terms plant output rates, capital equipment to be added or replaced and labour requirements to support a company's operating plan for the production of families of products

3.615
master planning
1. process of setting the overall level of manufacturing output, usually stated in broad terms (e.g. product groups, family of products).

2.(general) planning (of the higher planning levels) in which future activities are laid down in broad outline with regard to place and time.

NOTE The dates of carrying out the most important activities and the date of completion are specified in the planning of a particular project. In the planning of continuous production the production levels are laid down for the coming periods. In the planning of batch production and cyclical production, the sequence and possibly the size of the batches are laid down.

3.(MRP) function of setting the overall level of manufacturing output.

NOTE 1 Its prime purpose is to establish production rates in order to achieve management's objectives in terms of raising or lowering stocks or backlogs, while usually attempting to keep the production force relatively stable.

NOTE 2 The master plan is usually stated in broad terms (e.g. product groups, families of products) and it embodies the management's policy on customer service. It will extend through a planning horizon sufficient to plan the labour, equipment, facilities, material and finances required to accomplish the master plan. Various units of measure are used by different companies to express the plan such as standard hours, tonnage, labour, operators, units, pieces, money, etc.

NOTE 3 As this plan affects all company functions, it is normally prepared with information from marketing, manufacturing, engineering, finance, materials, etc. In turn, the master plan becomes management's authorization for the master scheduler to convert into a more detailed plan.

3.616
master production schedule (MPS, master schedule)
realistic, detailed, manufacturing plan for which all possible demands and constraints put upon the manufacturing facilities have been considered

NOTE 1 The MPS is a statement of what the company (e.g. product group, business unit) expects to produce and purchase expressed in selected items (MPS items), specific quantities and dates.

NOTE 2 The MPS should not be confused with a sales forecast which represents a statement of demand. The MPS will take forecast plus other important considerations (backlog, availability of material, availability of capacity, management policy and goals, etc.) into account prior to determining the best manufacturing strategy.

3.617
master schedule
see: master production schedule

3.618
master schedule item (MPS item, master planning item)
item which has a substantial effect on sales, resources or finance which is planned in the master production schedule (MPS)

3.619
material (in logistics)
products used during the production process, such as components, raw materials and ancillary materials

3.620
material issue
1. issuing of a particular quantity and assortment of materials and components from a store for use in the production process

2. materials and components that are issued from a store for use in the production process.

3. quantity of materials and components issued from a store in a particular period for use in the production process, and expressed in quantitative or financial terms

3.621
material requirement
requirement for materials for use in production in a particular period of time

3.622
material requirements planning (MRP)
"technique" for calculating the quantity and due date of work orders and purchase orders needed to meet the master production schedule of order point system

NOTE 1 The calculation nets off demand against existing stocks and supply orders, providing messages when their need dates should be amended or new orders should be raised. When lower level items are required it uses the bill of materials to determine the component quantities required and time phases their need date by the lead time required to produce the parent item.

NOTE 2 MRP is used for materials planning in the manufacture of end items and spares and is time phased allowing the rescheduling of orders when due dates and need dates are not in phase. MRP begins with the part numbered items listed on the master production schedule and determines the quantity of all components and materials required and the date that the materials and components are required.

NOTE 3 MRP is accomplished by multiplying all the components listed in a product bill of materials by the quantity of that product required in that time period, netting those gross quantities against on hand and on-order inventory and offsetting those net requirements by the appropriate lead times."

NOTE 4 Sometimes MRP is also referred to as MRPI.

3.623
materials flow
1. direction and path of the movement of materials and sequence of placements of those materials in a supply chain

2. purposeful movement of goods within space and time.

NOTE It describes especially the defined flow of goods (materials) from the entrance to the exit of a system interlinking all operations to produce, work on and use as well as distribute goods.

3.624
materials handling
activities of loading, unloading, placing and manipulating material and of in-process movement

3.625
materials handling area
all areas and spaces of a store used by materials handling equipment to handle incoming goods, to storage and remove storage units and to deliver them to the shipping area

NOTE The pre-store zone is part of the materials handling area. It can also contain work-places e. g. for picking goods from storage units according to pick orders, for packing them, etc.

3.626
materials handling equipment
technical equipment for moving goods by loading and unloading, carrying them and delivering them to their destination

3.627
materials handling time
time necessary to move materials from one work centre to the next work centre

3.628
materials management
planning and control of the activities related to the materials flow from the supplier up to the end of the conversion/production process

3.629
maximum order quantity
order quantity modifier, applied after the batch size has been calculated, that limits the order quantity to a pre-established maximum

3.630
maximum stock level
planned highest level of stock, above which stock is considered to be in excess and is normally flagged for management attention

3.631
means of transport
particular vessel, vehicle, or other device used for the transport of goods or persons

3.632
measuring point
(in logistics/accounting) reference point in the pipeline, which is a combination of a location and a point in time at which measurements are taken e.g. quantities, service levels

3.633
metered issues
issues of parts or materials from stores in quantities that correspond to the same rate at which materials are used

3.634
milk run
regular route for pickup of mixed loads from several suppliers

3.635
minimum order quantity
smallest order quantity which in principle is allowed

3.636
minimum stock level
planned lowest level of stock, below which stock is normally flagged for management attention and orders expedited

3.637
min-max ordering system (B-S ordering system)
ordering system with a fixed re-order level (“B”), variable order intervals and variable order quantities

NOTE As soon as the stock falls below the level “B” an order is placed such that the stock becomes equal to the level “S”.

3.638
minor set-up
incremental set-up activities required when changing *the production* from one item to another within a group of items

3.639
mix
see: product mix

3.640
mix flexibility
ability of a production unit to change quickly from the manufacturing of one product type to another

3.641
mix forecast
proportion of products that will be sold within a given product family, or the proportion of options offered within a product line

NOTE Product and option mix will be forecasted as well as aggregate product families. Even though the appropriate level of units is forecasted for a given product line, an inaccurate mix forecast can create material shortages and inventory problems.

3.642
mixed mode manufacturing
see: hybrid manufacturing

3.643
mode of transport
method of transport used for the carriage of goods

3.644
modification
alteration made to a physically existing product usually resulting in an improvement in performance and generally carried out as the result of a design change (e.g. replacing a plain bearing by a sealed roller bearing), e.g.: design change note , engineering change.

3.645
modular bill of material
bill of material that is arranged in product modules or options. It is often used in companies where the product has many optional customer features, e.g. assemble-to-order companies as vehicle manufacturers

3.646
monorail (endless) conveyor
overhead materials handling equipment buffering unit loads during circulation

NOTE The load trolleys are fixed to the pull chain and moved continuously. The conveying path can run horizontally, in curves or inclined.

3.647
move card
(in a just-in-time context) card or other signal indicating that a specific number of units of a particular item are to be taken from a source (usually an outbound stock point), and taken to a point of use (usually an inbound stock point)

[See also: Kanban]

3.648
moving average
arithmetical average of a certain number of the most recent observations, e.g. moving annual average

3.649
moving period plan (MPP)
plan of activities with a horizon of a fixed number of periods, whereby a new period is added after every period which is past

NOTE The plans are revised at least once per period. The quantities relate to the total of the periods to be planned and/or the individual periods

3.650
master planning item (MPS-item, master schedule item, master planning item)
item selected to be planned by the master scheduler in the master production schedule (MPS) and described by a bill of material and/or bill of labour

NOTE A selection of a MPS item would depend on the characteristics of a particular market in general and on the decoupling point position and the product structure in particular.

Examples of MPS items are: a sales product, a commercial type, a component, a production module, a parent item of a planning bill of material.

3.651
multi bag
flexible dunnage produced from textile or film which allows for high density packing as the textile takes on the shape of the component

3.652
multi-level bill of material
display of all the components directly or indirectly used in a parent, together with the quantity required of each component

3.653
multi-level where-used
record for a component that lists all the parent items where that component is directly used, the next higher level parent items where each of the parent items is used and so up to the highest level (level 0) parents

3.654
multi-modal transport
carriage of goods by at least two different modes of transport

3.655
multiple sourcing
selecting of and working with more than two suppliers for a certain product

3.656
narrow aisle stacker
see: high rack stacker

3.657
need date
date when an item is required for its intended use

NOTE In an MRP system, this date is obtained by a bill of material explosion of a master production schedule and the netting of the gross quantity thus calculated against available stock.

3.658
nervousness
(in MRP) characteristic in an MRP system when minor changes in higher level records (e.g. level 0 or 1) of the master production schedule cause significant timing or quantity changes in lower level (e.g. level 5 or 6) schedules and orders

3.659
net available capacity
see: planned capacity

3.660
net change planning (net change MRP)
approach where the material requirements plan is continually retained in the computer

NOTE Whenever there is a change in requirements, open order or stock status, or engineering usage, a partial explosion is made only for those parts affected by the change. Net change systems may be continuous and totally transaction oriented, or done in periodic (often daily) batch.

3.661
net inventory
see: available stock

3.662
net requirements
difference between gross requirements and the sum of on hand stock, scheduled receipts and safety stock in material requirements planning

3.663
netting
process of calculating net requirements

3.664
network planning
planning of a system by determination and resolution of the network of interrelated activities of which it is comprised

3.665
next higher assembly (NHA)
assembled product in the next higher level in the product structure

3.666
node
fixed point in a firm's logistics system where goods come to rest; includes plants, warehouses, supply sources, and markets

3.667
non-production stock
stock that is not to be incorporated into finished products (e.g. stationery, maintenance material, cleaning materials)

3.668
nonconforming material
any raw material, part, component, or product with one or more characteristics that depart from the specifications, drawing, or other approved product description

3.669
nominal requirements
(in an MRP system) the calculation of the requirement as calculated from the bill of material without the addition of allowances for scrap, wastage or independent demand

3.670
non-scheduled hours
hours when a machine is not scheduled for operation such as: meal breaks, night works, weekends, holidays and planned maintenance

3.671
norm stock (standard stock)
stock of a particular product type which is set as the standard for a particular period of time, expressed in quantitative or financial terms

NOTE Norm stock is the stock norm expressed as absolute quantity.

3.672
norm supply quantity
predetermined quantity of products of one product type which is (to be) shipped at one time to a certain destination

NOTE A norm supply quantity should be a multiple of a minimum supply quantity.

3.673
normal demand
actual demand after elimination of incidental fluctuations

NOTE As long as demand data are not available, sales data may have to be used.

3.674
normal sales
actual sales after elimination of incidental fluctuations

3.675
numerical control (NC)
automatic control of a process performed by a device that makes use of numeric data usually introduced while the operation is in progress

NOTE The term numeric control is commonly used in machine tool applications.

3.676
objective chart
cumulative delivery schedule used in the line-of-balance technique

[See also: Line of balance.]

3.677
obligated material
See: Reserved material

3.678
obsolete stock
stock that cannot be or is unlikely to be consumed in future production processes or to be sold as originally planned

3.679
off load
reschedule or use alternate routings to reduce the workload on a machine, work centre, or facility

3.680
off take
actual quantity or value of goods taken by a customer from a supplier during a particular period

NOTE Off take may differ from the ‘demand’ if this cannot be met in full or if more is shipped than required.

3.681
one card kanban system
kanban system where only a move card is employed

3.682
one off production
see: job shop production

3.683
on-carriage
carriage of goods to the place of destination after discharge from the main means of transport

3.684
on-hand balance
quantity of an item shown in the inventory records as being physically in stock

3.685
on line service
processing of transaction data as soon as the transaction occurs. It is real-time processing as opposed to batch processing

3.686
on time schedule performance
measure (percentage) of meeting the customer's originally negotiated delivery request date

3.687
open access
the ability of rail operators (under certain conditions) to gain access onto rail networks of other EC member countries

3.688
opening stock
stock of products of a product-type at the beginning of a past, present or future period of time

3.689
open order
uncompleted order

NOTE In a MRP-system, an open order is a released manufacturing or purchasing order (scheduled receipt).

3.690
operation
job or task, consisting of one or more elements of work, usually done in one location

3.691
operation priority
scheduled due date and/or start date of a specific operation on a specific job

NOTE It is usually determined by back scheduling from the due date of the job.

3.692
operation sequence (routing)
sequence of operations which a product has to undergo during its production

3.693
operation time (process time, machine time)
1. period required to perform a particular operation on a product

2. sum of the periods required in order to perform all the necessary operations on a product before it can be delivered, exclusive of set-up time and breaking-down times

3.694
operations scheduling
see: shop scheduling

3.695
order
request to deliver specified quantities of goods or to render specific services

NOTE The term "order" in English also means "production order" in the manufacturing area.

3.696
order acceptance
process of accepting and confirming orders, given the availability and/or future availability of the goods and agreements with regard to the terms of delivery

NOTE For a manufacturing unit order acceptance includes a material and capacity availability check.

3.697
order acknowledgement lead time
time taken by a supplier to acknowledge receipt of an order from a customer

3.698
order backlog
see: backlog, past due order

3.699
order book
total number of orders received that have not yet been delivered, cancelled and/or invoiced

3.700
order clearing
assessment of incoming orders, clarification of any points that are unclear and translation of orders into unambiguous and binding information

3.701
order control
control of manufacturing activities by individual manufacturing, job, or shop orders, released by planning personnel, and authorizing production personnel to complete a given batch or lot size of a particular manufactured item

NOTE Information to complete the order (components required, work centres and operations required, tooling required, etc.) is often printed on paper or tickets, and distributed to production personnel. These are often called shop orders or work orders.

This sometimes implies an environment where all the components for a given order are picked and issued from a stocking location, all at one time, and then moved as a kit to manufacturing before any activity begins. Most frequently seen in job shop manufacturing.

3.702
order cover (free balance)
sum of stock physically on hand and on order, less any reserved stock

3.703
order entry
process of checking, accepting and translating what a customer wants into terms used by the manufacturer or distributor

NOTE This can be as simple as creating shipping documents for a finished goods in a make-to-stock environment, or it might be a more complicated series of activities, including engineering effort for make-to-order products.

3.704
order interval
time period between the placement of orders

3.705
order lead time
see: customer order lead time

3.706
order moment
moment at which ordering can and/or shall take place

3.707
order picking
collecting the goods in a store which belong to a customer order

[See also: Picking.]

3.708
order picking area
area or space of a store where order picking jobs are carried out

NOTE It may contain lanes of a rack if the goods are picked at their storage location, or it may be designed as a number of defined order picking stations where storage units are brought to.

3.709
order picking store
type of a store from which items are picked according to customer orders

3.710
order picking truck
lift truck fitted with an operator's platform which can be raised with the platform or fork arms, allowing the operator to load or unload goods from racking to the load-carrying attachment

3.711
order planning
planning of the execution of orders over successive periods, given the agreed delivery times for the orders and, if applicable, the various operations that have to be carried out for each order and the capacity available and / or required for this

3.712
order point (reorder level)
control level that the quantity of stock and on order is monitored against

NOTE 1 When the stock and on order quantity falls to or below the order point, action is taken to replenish the stock. The order point is usually calculated as forecast usage during the replenishment lead time plus safety stock.

NOTE 2 When the quantity falls below the re-order level a fixed or variable quantity (depending on the ordering system applied) is placed on order. The re-order level and re-order quantity are used in a reorder system. They are related by a formula embracing safety stock and mean usage during replenishment lead time.

3.713
order point system (re-order level system)
pull system used at a stock point in which supplies are ordered when the stock level has dropped below a certain level

NOTE A re-order level system where stock is physically separated is called a two-bin (or some times a three-bin) system.

3.714
order preparation lead time
period of time between the moment it is determined a product has to be ordered (ordering requisition date) and the moment an order is released (date of order release)

3.715
order processing
data capture and data processing which arises from an order

3.716
order processing lead time
1. period of time between the moment a shop order has been received in a production centre and the moment a work order is issued to a work centre

NOTE The time needed for order acknowledgement, order acceptance and preparing work order(s) is part of the order processing lead time.

2. period of time between the moment an order has been received in a sales organization, and the moment a pick order is issued to take certain quantities of particular products from stock for shipment and / or production process.

3.717
order progress control
check on the progress of orders with regard to order planning and/or delivery times

3.718
order promising (customer order promising, order dating)
process of establishing a delivery date for an order and making a commitment to a customer

3.719
order quantity
quantity of a particular good that is ordered from a plant or a supplier

3.720
order quantity modifiers
adjustments made to a calculated order quantity

NOTE Order quantities are calculated based upon a given batch sizing rule, but it may be necessary to adjust the batch size due to some special considerations (for example supplier's minimum order quantity or container size).

3.721
order registration
recording of orders that have been received

3.722
order requisition
instruction from one department to another to procure manufactured or purchased items, for example a purchase requisition issued by a stock control department to a purchasing department

[See also : purchase requisition.]

3.723
order survey
survey of the order situation at a given date, for a given product and/or a given customer or supplier and / or for a given period of time

3.724
ordering
act of placing an order

3.725
ordering category
collection of products to which the same rules apply with regard to ordering, e.g. the same ordering frequency, etc.

3.726
ordering frequency
number of times per period that a particular product or a group of products is ordered

3.727
ordering procedure
procedures for the systematic initiation, at appropriate times, of orders to carry out supply operations to meet specified target or commitments

NOTE The procedure can be based on a wide variety of factors such as sequence of arrival of orders, delivery requirements, process duration, resource utilisation, work-in-progress, stock holding cost and stock levels. Many techniques and system titles are used in practice.

3.728
ordering rule
set of instructions for ordering goods, incorporating parameters, e.g. the ordering categories reorder levels and order quantities

3.729
ordering system
set of rules defining when and how much to order

[See also: Re-order level (B-Q) ordering system, Re-order period (ST) ordering system, Min -Max (BS) ordering system, s-Q ordering system, s-S ordering system]

NOTE 1 These rules are based on a number of parameters and indicators such as :

— B, re-order level for ordering systems with variable order intervals;

— Q, fixed order quantity;

— s, re-order level for ordering systems with fixed order intervals;

— S, “maximum” stock level (order-up-to-level), used for calculating variable order quantities;

— T, fixed order interval.

NOTE 2 Combination of these parameters leads to “hybrid” re-ordering systems as s-Q and s-S ordering systems.

3.730
origin
see: country of origin

3.731
original equipment manufacturer (OEM)
manufacturer that buys and incorporates another supplier's products into its own products

NOTE Products/items thus supplied are known as OEM equipment.

3.732
outbound stock point
designated locations near the point of use on a plant floor to which material produced is taken until it is pulled to the next operation

3.733
outgoing stock
see: loading stock

3.734
outlet
place where goods are offered for sale

3.735
outlet planning
selection of the distribution channels and outlets, and planning the goods flow for that selection in distribution planning

3.736
output
product of a process or a system

3.737
output variable
system variable to which a manager cannot assign arbitrary values

NOTE Such values can only to be changed indirectly by means of other relevant values.

3.738
outside exchange of die (OED)
see: single minute exchange of die (SMED)

3.739
outsider
(in transport) carrier, which operates on a route served by a liner conference but which is not a member of that conference

3.740
outsourcing
process of having suppliers provide goods and services that were previously provided internally

3.741
outward handling (handling-out)
operations to be performed on outgoing goods, both clerical and physical, from the moment forwarding orders can be executed to the moment of actual departure of the goods

3.742
outward processing relief (OPR)
relief of import duties on parts/components of a final product, which have been exported to be used in the final product

3.743
over, short and damage (OS&D)
discrepancy between the freight delivered and the freight shown on the bill of lading

NOTE 1 Freight not included on the bill is termed "over"; missing freight is said to be "under"; and damaged freight is referred to as "damaged".

NOTE 2 Freight agents file regular OS&D reports that document these discrepancies.

3.744
overdue order (past due order, late order)
order that is not complete when the due date is past

3.745
overhead conveyor system
materials handling equipment not directly supported on the floor and without the need for keeping free any areas or corridors

3.746
overload
load on a resource that exceeds the capacity of that resource

3.747
overrun
quantity received from manufacturing or a supplier that is in excess of the quantity ordered

3.748
package (parcel)
complete product of a packing operation, as prepared for transport and consisting of the packaging (receptacle, container, wrapping) and its contained goods

3.749
package quantity
batch of items that is packed in a single package as a unit of sale for convenience in handling, storage and distribution

3.750
packaging
materials used for the containment, protection, handling, delivery and presentation of goods

3.751
packaging bill of material
list of the materials required to pack a product

NOTE It is sometimes considered to be an additional level of assembly in a product bill of material.

3.752
packaging type
shape or configuration of a package as it appears for transport

3.753
packing
activities of placing and securing goods in packaging

3.754
packing density
number of cartons per unit of volume

NOTE A carton can comprise one or several products.

3.755
packing list
document specifying the contents of the delivery, such as the distribution of goods in individual packages

3.756
packing unit
type of package where a standard quantity of products of a specific product type can be packed and that requires no additional packaging for storage and shipment

3.757
pallet
horizontal platform, of minimum height compatible for handling by pallet trucks, and or forklift trucks and other appropriate handling equipment used as a base for assembling, storing, handling and transporting goods and loads, to facilitate the lifting and stacking of goods

NOTE 1 It may be constructed with, or fitted with, a superstructure.

NOTE 2 For the technical issues and dimensions of flat pallets for intercontinental materials handling, see ISO 6780:2003.

3.758
pallet pool
pool for the exchange of standard size pallets

3.759
pallet quantity
quantity of a product that goes on one pallet as standard

NOTE This quantity may be a multiple of the packing unit of the relevant product.

3.760
pallet rack
skeleton framework, of fixed or adjustable design, to support a number of individual pallet loads

3.761
pallet-stacking truck
stacking lift truck where the fork arms extend over the frame structure

3.762
pallet truck
pedestrian- or rider-controlled non-stacking lift truck fitted with fork arms

3.763
pallet unit
quantity of packaged goods, preferably stackable, that have been combined, with a pallet to form a unit load that can be handled with a fork lift truck or a hand pallet truck

3.764
pallet-wide container
container with an internal width of 2.44 m enabling two 1.2 m pallets to be stacked side-by-side

3.765
paperless purchasing
see: business to business, B2B

3.766
parallel planning
process of balancing the plans of departments or work centres where activities are performed that have to be completed at the same time

3.767
parallel splitting
employment of two or more work stations simultaneously, each on a part of the same batch and each carrying out the same operation, thus reducing operation time at the expense of extra set-up time

3.768
parent item
assembled product in a parts list of which all items one level down are components

3.769
parent/component relationship
single level relation in a bill of material that indicates the parent item, product or assembly, where a component item, component or material, is used

3.770
Pareto-analysis (Pareto's rule)
see: ABC classification

3.771
part
component of an assembly or product

3.772
part master record
see: item record

3.773
part period balancing (PPB)
dynamic batch sizing technique that uses the same logic as the least total cost method, but adds a routine called "look ahead/look back".

NOTE When the look ahead/look back feature is used, a batch quantity is calculated and before it is firmed up, the next or the previous periods' demands are evaluated to determine whether it would be economical to include them in the current batch.

3.774
parts classification and coding
technique that brings together parts that are similar in material, shape and/or function and codes them progressively by the degree of similarity, so that each code number clearly distinguishes the material, shape and/or function of the part

3.775
parts list
enumeration of the constituent parts of a product or assembly

[See: Bill of materials.]

3.776
past due order
line item on an open customer order that has an original scheduled ship date that is earlier that the current date

3.777
pay point
see: Count point

3.778
pegged requirement
requirement at a component level that shows the next level parent item and the identity of the demand that actually created the requirements

3.779
pegging
(in material requirements planning) displays for a given product the details of the sources of its gross requirements and/or allocations, e.g. "live" where-used information

NOTE It may be single-level, i.e. only the immediate demand identity is reported, or multi-level, i.e. the immediate and ultimate demand identity is reported.

3.780
performance indicator (PI)
information about a process that is:

- defined and recorded in a prescribed way;
- supportive to the management of an enterprise;
- related to standards or other information

3.781
performance measurement
process of designing, monitoring and controlling the performance of an activity / enterprise using agreed indicators that encourage a business to meet its strategic objectives

[See also: benchmarking.]

3.782
period batch control (PBC)
method of ordering where the ordering of made parts is based on explosion from a series of short-term programmes and, as far as possible, the deliveries of materials and bought parts from suppliers are based on call-off notes generated by the same explosion

NOTE PBC is an extension of flexible programming. It is a flow control, single-cycle, push method of ordering.

3.783
period order quantity
batch sizing technique under which the lot-size is equal to the net requirements for a given number of periods (e.g. weeks) into the future

3.784
periodic ordering system
ordering system in which it is determined at fixed times whether a procurement order shall be placed and what the order quantity shall be

3.785
periodic replenishment
method of aggregating requirements to place deliveries of varying quantities at evenly spaced time intervals, rather than variably spaced deliveries of equal quantities

3.786
periodic review system
see: fixed interval reorder system

3.787
perpetual inventory system
stock record keeping system where each transaction in and out is recorded and a new balance is computed

3.788
phantom bill of materials
bill-of-materials used for immediate or transient sub-assemblies, cf. pseudo bill of materials

NOTE 1 The sub-assemblies are normally not stocked, but in the event that they are stocked, any such stock will be included in netting calculations.

NOTE 2 Material requirements planning is programmed to ignore the parent of a phantom bill of materials (that has a zero lead time and lot-for-lot order quantity) and to proceed directly to its components."

3.789
phantom item
item built and immediately consumed in the assembly of its parent without storage in stock points, cf. pseudo item

NOTE 1 A phantom requires special processing by MRP. The bill of materials specifying the relation between phantom, its parent and its component(s) is called a phantom bill of materials.

NOTE 2 Sometimes also the term “transient assembly” is used.

3.790
physical distribution
activities related to the flow of goods from the end of production to the customer

NOTE In a more general meaning distribution is the set of activities which ensure the availability of goods in the desired quality, quantity, place and time for the customer.

3.791
physical stock (stock on hand)
quantity of goods in stock which is separately identifiable in a particular place (warehouse, technical store or other stock site) expressed in quantitative and / or financial terms

3.792
pick up and delivery
service concerning the collection of cargo from the premises of the consignor and the delivery to the premises of the consignee

3.793
picking
process of withdrawing from stock the finished products to be shipped to a customer, or the components for making the products

[See also: order picking.]

3.794
pick order
order to take certain quantities of particular products out of the stock (for shipment and / or the production process)

3.795
picking store
part of a storage area where goods are picked from

NOTE Usually replenished from a bulk store.

3.796
piece parts
those parts that consist of one piece; no assembly is involved

3.797
piggyback semi-trailer
essentially a road semi-trailer but with reinforced lateral beams to enable lifting by a gantry or mobile crane

3.798
piggyback transport
carriage by rail of a suitably adapted semi-trailer upon a specially designed wagon called a pocket wagon

3.799
pilot plant
small-scale production facility used to develop production processes and to manufacture small quantities of new products for field testing

3.800
pipeline
path between the various stock sites or physical processes or measuring points on the supply chain

3.801
pipeline inventory
see: pipeline stock

3.802
pipeline lead time
time that a product takes to pass between two given measuring points in a pipeline

3.803
pipeline stock
sum of stocks held between two measuring points in a supply chain

3.804
place of acceptance (place of receipt)
location where a consignment is received by the carrier

3.805
place of departure
port, airport or other location from which a means of transport is scheduled to depart or has departed

3.806
plan group
lowest aggregation level of a collection of production resources that have such a high degree of I nterchangeability that no further detailed specifications are needed for the relevant planning

3.807
planned capacity (net available capacity)
sum of normal machine capacity and planned overtime

3.808
planned issue (controlled issue)
issue of an item predicted by MRP through the creation of a gross requirement or allocation or other planning tools

3.809
planned load
standard hours of work required by MRP recommended (planned) production orders

3.810
planned order
suggested order quantity and due date created by a (MRP) system

NOTE Planned orders at one level will be exploded into gross requirements for components at the next lower level. Planned orders also serve as input to capacity requirements planning, along with released orders, to show the total capacity requirements in future time periods.

3.811
planned receipt
intended receipt against an open purchase order or open production order in a MRP system

3.812
planned stock
stock level that is the sum of cycle stock and buffer stock

3.813
planning
process of setting the overall level of manufacturing output, usually stated in broad terms (e.g. product groups, family of product)

3.814
planning bill of material
artificial grouping of components and subassemblies, in a bill of material format, used to facilitate master scheduling and/or material planning

NOTE The parent of this bill of material is a non-build able item.

3.815
planning horizon
period of time to which a particular plan relates

3.816
planning level
level to which a plan relates in the planning hierarchy: e.g. strategy (business plan), policy (master production schedule) and detailed control (material requirements plan)

NOTE The number and type of planning levels depend among other things, on the nature of the goods flow to be planned and on the agreements with customers and suppliers (e.g. whether one is working with plans and/or orders)

3.817
planning period
indication of the period of time to which the planning figures relate, (e.g. annual figures, monthly figures, weekly figures, etc.)

3.818
planning time fence (PTF)
point in time in a master production schedule after which the ability to change supply orders is limited or non-existent

3.819
pocket wagon
rail wagons with pockets to accommodate the wheels of semi-trailers so as to remain within the loading gauge profile

3.820
point of sale
relief of inventory and computation of sales data at the time and place of sale, generally through the use of bar coding or magnetic media and equipment

3.821
positive release
process by which products may be shipped to a new location or customer in a quarantine status and held at that location until released

NOTE Positive release requires lot, pallet or shipment level control of the goods by the supplier’s quality assurance and shipping departments and the customer’s goods-in and stores departments.

3.822
post deduct
see: back flushing

3.823
post pallet
pallet having a fixed or detachable superstructure of posts to permit stacking, either with or without rails or sides

3.824
power-and-free chain conveyor
materials handling equipment for horizontal or upwards inclined conveying of unit loads where trolleys are linked to and towed by a chain which circulates in a channel

3.825
pre-carriage
carriage of goods from the place of receipt to the place of loading into the main means of transport

3.826
pre-expediting
function of following up on open orders before the scheduled delivery date, to ensure the timely delivery of materials in the specified quantity

3.827
pre-release
period of product specification, design, and design review

3.828
pre-store zone
part of the materials handling area of a store situated directly in front of the storage area

NOTE Here storage units are checked (contour checking), registered (identification point) and delivered to the storage location. In addition storage units to be removed are moved from their storage locations to be checked and delivered for order picking or outgoing goods handling.

3.829
preparation time
1. (general) period preceding the start of a given activity and required to carry out one or more preceding activities;

2. (with regard to production) period of time between the receipt of a work order and the start of manufacture and needed to carry out the production preparation activities

3.830
primary location
designation of a certain storage location as the standard, preferred location for an item

3.831
priority control
process of communicating start and completion dates to manufacturing departments in order to execute a plan

NOTE The work-to-list is the tool normally used to provide these dates based on the current plan and status of all open orders.

3.832
priority planning
planning of activities on a priority basis

3.833
private warehouse
warehouse operated by the owner of the goods stored there

3.834
process
series of interrelated actions and/or activities that transform a particular input (information and/or material, components, work, energy, etc.) into a particular output (new information and/or products)

3.835
process control
arrangements and actions required to maintain stability in the process

NOTE Normally, a system of monitoring key parameters of the system and the creation of a negative feed-back loop, either automatic or manually operated which will constantly adjust the process to maintain stability.

3.836
process flow production
production system in which there are minimum interruptions in the processing of any one production run or between production runs of similar products

NOTE Queuing time is virtually eliminated by integrating the movement of products into the actual operation of the resource performing the work.

3.837
process flow scheduling (PFS)
method for planning equipment usage and material requirements that uses the process structure to guide the scheduling calculations

NOTE This method is used in flow environments common in the processing industries.

3.838
process layout
arrangement where resources performing similar functions are grouped in departments

3.839
process planning
activity that determines the operations required, their sequence and the method of manufacture, to produce a part or assembly

3.840
process manufacturing
manufacture where homogeneous products are produced other than by assembly or machining of discrete parts, e.g. by mixing, forming, treating

3.841
process time
see: operation time

3.842
processing unit
(in logistics) smallest resource that can be used for planning and signalling with regard to production

NOTE This can be a machine, an employee or a combination of both.

3.843
procurement
activities which ensure the availability of the material or services for the user in the required quality, quantity, place and time

3.844
procurement lead time
period of time between the recognition of a need and the satisfaction of that need

3.845
procurement order
see: purchase order

3.846
product allocation
reservation of a specific quantity of a particular product for a certain customer or manufacturing requirement

3.847
product batch
collection of "products of a kind" considered as a unit with regard to certain operation e.g. handling, purchasing production, transport

3.848
product centred organization
organization that groups together the people, functions and activities with the production of a particular product

NOTE Service organizations may be product centred, the grouping being around the supply of a particular service.

3.849
product configuration
see: configuration

3.850
product class
group of products having one or more specified characteristics in common, for example metal ware, electrical components, machine spare parts, stock or order products

3.851
product data management (PDM)
process by which the data relating to the materials, processes, specifications and drawings used to manufacture an end item are developed and maintained

NOTE PDM is usually supported by a computer system to store data and drawings and control development.

3.852
product group (product family)
number of products with one or more common characteristics that make it convenient to combine them for planning and control purposes

NOTE Common characteristics can include similar manufacturing technique, resource or similar marketing requirements.

3.853
product life cycle (life cycle)
period of time from a product inception until its ultimate disposal or discontinuation

NOTE 1 In logistics terms the cycle is seen as the successive stages: concept – design – development – delivery (incorporating manufacture and distribution) – maintenance – recycling and/or disposal.

NOTE 2 In marketing the following product life cycle phases can be distinguished: introduction, growth, maturity, saturation, decline, end.

3.854
product life quantity
quantity of a product reflecting the total number of a product to be made available for the expected demand during total commercial product life cycle, as set by a commercial department of a company

NOTE The product life quantity is used for determining the calculation quote for initial technical costs. Also for determining the tool quote for general purpose tools and specific tools and also for fixing the capital investment quote of specific machines.

3.855
product maintenance
combination of all technical, administrative managerial activities during the life cycle of a product intended to retain the product in, or restore it to, a state in which it can perform the required function

NOTE Product maintenance is a part of Integrated Logistic Support.

3.856
product mix
combination of individual product types that makes up the total range

3.857
product organization
type of factory structure in which processing units complete all the parts or assemblies they make, for example a continuous line flow or group technology organization

3.858
product plan
document containing for each commercial type:

1) general product description (main features etc.);

2) factory price indication and related calculation series;

3) planned product life cycle; and their interrelationships

3.859
product structure
system of relations in levels embracing the constituent parts of an assembled product

3.860
product tree
graphical representation of a bill of materials

3.861
product type
class of similar or identical products

3.862
production
conversion of materials and assembly of components to make products

3.863
production activity control (PAC)
see: shop floor control

3.864
production allocation
allocation to the relevant factories of the types and quantities to be produced of a range of products

3.865
production and inventory management (PIM), production and inventory control (PIC)
function of planning and controlling manufacturing resources and material supplies in order to meet a business plan

3.866
production batch (lot, batch quantity)
predetermined number of units of a particular product type (to be) produced without interruption (apart from the usual interruptions to working time) and expressed in quantitative terms

3.867
production batch stock
calculated stock arising out of the fact that a product is made in batches

3.868
production bill of material (manufacturing bill of material)
bill of material showing the structure and quantity of each component at all levels (assemblies, subassemblies, raw material, purchased parts, etc.) needed to make one unit of a given product

NOTE The production bill of material is structured in the way the product is actually made in steps: raw materials to parts to subassemblies to assemblies to end products.

3.869
production capacity
amount of resources available for the production of products

NOTE 1 After deducting all non-productive time such as planned maintenance, holidays and rest periods, allowances for plant breakdown, sickness and absenteeism.

NOTE 2 Machine set-up time may be included or excluded from capacity, according to whether it is treated as a planned activity or not. Activities that form a vital part of the production process, such as testing, should be included in capacity planning.

3.870
production control
activities or systems which ensure that production operations proceed in accordance with plans

NOTE These arrangements/systems include issuing work orders, monitoring of performance and initiating corrective actions.

3.871
production cycle
successive activities in the production process in their entirety from the acceptance of a supply order to the ultimate delivery of the product ordered, cf.: Production lead time.

3.872
production lead time
period of time between the moment a work order is received and its completion

NOTE Included here are order processing lead time, preparation lead time, manufacturing time, inspection and put away time.

3.873
production line
sequence of work stations dedicated to the manufacture of specific products or product families

3.874
production order
see: work order

3.875
production plan (manufacturing plan)
1. record of the product mix, product volume and order of production that it is intended to be manufactured during a defined future period;

2. in ERP and MRPII, statement of the overall level of manufacturing output to be produced.

[See also: sales and operations plans]

NOTE 1 This is usually stated as a monthly rate for each product family (group or products, items, options, features) and may be expressed as units, tonnage, standard hours, number of workers etc.

NOTE 2 The production plan is management's authorization for the master scheduler to convert it into a more detailed plan, that is, the master production schedule.

3.876
production planning
process of setting the overall level of manufacturing output, usually stated in broad terms (e.g. product groups, family of products)

3.877
production programme
list or chart showing products and the quantities which are to be produced in given periods of time

3.878
production reporting and status control
means of providing feedback to the production schedule which allows for corrective action and maintenance of valid on-hand and on-order balances

NOTE Production reporting and status control normally includes manufacturing order authorisation, release, acceptance, operation start, move reporting, scrap and rework reporting, order close-out and costing interface.

3.879
production schedule
plan which authorizes the factory to manufacture a certain quantity of a specific item

3.880
productivity
ratio between the input and the output of a process

NOTE Productivity is a measure of the contribution of an element of the input to the output of a process, e.g. labour productivity.

3.881
(labour) productivity ratio
standard hours equivalent to the production achieved, whether completed or not, divided by (or expressed as a percentage of), the budgeted number of standard hours

3.882
projected available balance
stock balance projected out into the future

NOTE It is the running sum of on-hand stock minus requirements plus scheduled receipts and planned orders.

3.883
projected load
see: capacity requirements planning

3.884
projected on hand
(in MRP) inventory balance projected out into the future

NOTE It is the running sum of on-hand inventory minus requirements plus scheduled receipts (projected available balance minus planned orders).

3.885
provenance
geographical location from which a consignment emanates

3.886
pseudo bill of materials
bill of materials that is used to describe a sub-assembly that cannot be assembled independently to a parent, cf. phantom bill of materials and planning bill of materials

NOTE 1 An example of this is a radio system in a car.

NOTE 2 Material requirements planning is programmed to ignore the parent of a pseudo bill of material (that has zero lead time and lot-for-lot order quantity) and to proceed directly to its components.

3.887
pseudo item
non-existing item assigned as a parent to a collection of related components in order to group items to facilitate planning design or a physical activity associated with the bill of materials, cf. phantom item

NOTE The bill of materials specifying the relation between the pseudo item and its component(s) is called a pseudo bill of materials.

3.888
public warehouse
warehouse which is available to all companies and persons who wish to make use of the services offered

3.889
pull system
ordering system where orders are created by demand

3.890
purchase and make to order
type of manufacturing in which material is acquired and converted only when a customer order is received

3.891
purchase lead time
period of time between placing an order for an item on a supplier and taking delivery of that item

3.892
purchase order (procurement order)
instruction to a supplier to provide a product or service

NOTE A purchase order normally specifies quantity, delivery instructions and price.

3.893
purchasing (buying)
function that finds and develops sources of supply, obtains quotations, negotiates prices and conditions, places purchase orders and progresses consequent deliveries

3.894
push-pull attachment
attachment to a lift truck which is designed to draw unit loads carried on a load board, usually composed of a sheet of fibre board, on to the lifting plate or forks by gripping the near edge by a clamp controlled by the driver

3.895
push system
ordering system in which orders are created by planning to meet anticipated or forecast demand

3.896
pyramid forecasting
forecasting technique that enables management to review and adjust forecasts made at an aggregate level and to keep lower level forecasts in balance

3.897
quarantine
set aside items from availability for use or sale until the required quality tests have been performed and conformance certified.

[See also: blocked stock]

3.898
queue
jobs at a given work centre waiting to be processed

3.899
queue ratio
queue originally scheduled between the start of the operation being considered and the scheduled due date, divided by the hours of slack time remaining for the job

3.900
queuing time
period of time between the arrival of material at a work station and the start of work on it

3.901
quotation (quote)
statement of the price, terms of sale, and description of goods or services offered by a supplier to a prospective buyer

NOTE When given in response to an enquiry, it is usually considered an offer to sell.

3.902
rack
storage device for handling material in pallets

3.903
rack serving unit
materials handling equipment for storage and retrieval of unit loads in line racks

NOTE The loading of unit loads is realised by driving under and lifting through telescopic forks, by pulling them over through pulling equipment or (in connection with racks goods running through) by rolling over to the roller conveyor of the elevating platform. The unit loads vertical movement is realised by lifting and dropping the elevating platform. For the horizontal movement a rack serving unit is guided by rails on the floor and at the top of the rack or at the ceiling.

3.904
random location storage
method of storage in which parts are placed in any convenient empty space when they arrive in the stores or warehouse

[See also: “Fixed location storage” and “stock location system”.]

NOTE The method requires a locator record to identify where the parts are located but usually takes up less storage space than a fixed location storage system.

3.905
rate based scheduling
method of scheduling and producing based on a periodic rate, for example daily, weekly or monthly

NOTE Traditionally, this method has been applied to high volume and process industries.

3.906
rated capacity
achievable capacity based on known actual utilisation and efficiency

3.907
raw material
purchased items or extracted materials that are converted via the manufacturing process into components and products

3.908
reach stacker
mobile handling vehicle equipped with a spreader (for top-lifting containers) and grappler arms (for bottom-lifting swap bodies)

3.909
reach truck
stacking lift truck with outriggers where the load can be repositioned by moving the mast or fork arm carriage

3.910
recallability
ability to locate and potentially return all manufactured or intermediate products having defined characteristics

NOTE 1 An example of a defined characteristic of a product that could cause it to be recalled would be if it contained any part of a lot of contaminated material.

NOTE 2 Recallability is a legal requirement in certain industries such as pharmaceuticals.

3.911
receipt
1. quantity of goods received by a customer from his suppliers in a particular period and expressed in quantitative of financial terms;

2. document recording the quantity of goods received

3.912
receiving area
area in a store for the external supply of goods to be stored

NOTE It consists an area and space for unloading delivery vehicles (e. g. ramps), for checking the supply and for placing the goods ready for being taken. Additionally, operations to split transport units, to repackage them and to build storage units might be located there as well.

3.913
receiving lead time
period of time between the arrival of the goods at the door of the receiving organization (or the named destination), according to the terms of delivery and the moment those goods are available for use

NOTE Included here are the time needed for the physical receipt of the goods (inspection of conformance with the order, quantity, damage), quality inspection, put away time and any waiting time(s).

3.914
receiving process
physical acceptance of goods from a supplier and the information process that confirms the transaction

NOTE This may include checks of identity, quantity and quality.

3.915
receiving stock
stock comprising all the goods that have arrived at the door of the receiving organization and which are not yet available in the stock of that organization

3.916
reconditioning
process of cleaning, repairing, repacking or re-manufacturing a previously manufactured product in order to extend its life

3.917
record accuracy
measure of the conformity of recorded values in a recording system such as a stock record system to the actual values

3.918
recovery time
in periods of insufficient capacity, jobs back up indefinitely

3.919
recyclables
materials that, after serving their original purpose, still have useful physical or chemical properties and therefore can be re-used into new products

3.920
recycling
process by which materials otherwise destined for disposal are collected, processed and remanufactured into new products

3.921
redelivery
1. (in air cargo) return of a shipment to the party who originally delivered it to the carrier;

2. return of a charter vessel to the owners

3.922
regenerative planning
planning that discards all previous plans and starts again from basic data

3.923
refurbished goods
see: remanufactured parts

3.924
regenerative material requirements planning
application of regenerative planning where planned orders are discarded but firm and subsequent supply orders retained and new plans constructed around these to meet demands, thus creating a fresh set of planned orders

3.925
reject factor
percentage factor in the product structure used to increase gross requirements to account for anticipated loss within the manufacture of a particular product

3.926
reject
product or component that, processed at a particular stage, does not meet the specified quality requirements

NOTE Reject can be subdivided into the following:

— products that can still meet the set quality requirements by undergoing further processing;

— products that meet lower quality requirements;

— products that have completely lost their original value (scrap).

3.927
reject rate
percentage difference between the amount or number of units of products which is started in a manufacturing process and that amount or number of units which is completed at an acceptable quality level

3.928
release (manufacturing release)
act of changing the status of an order from being planned or firm planned to released for manufacture, purchase or despatch

NOTE For effective control the planner should check that this change is realistic. E.g. for a production order, that the material, machine capacity and tooling is available.

3.929
release order
see: open order

3.930
reliability
probability that a product will perform its specified function under prescribed conditions without failure for a specified period of time

[See also: delivery reliability]

3.931
re-order level
see: order point, re-order point

3.932
re-order level ordering system (B-Q ordering system)
ordering system with a fixed re-order level (“B”), variable order intervals and a fixed order quantity (“Q”)

NOTE As soon as the stock falls below the level “B” a quantity “Q” is ordered.

3.933
re-order period ordering system (S-T ordering system)
ordering system with variable order quantities and fixed order intervals

NOTE At the end of each fixed order interval (“T”) an order is placed for the quantity necessary to replenish the stock to a level “S”.

3.934
re-order quantity (ROQ)
in a fixed order system of stock control, the fixed quantity that should be ordered each time the available stock (on hand plus on order) falls below the order point.

NOTE In a variable reorder quantity system, the amount ordered from time period to time period will vary.

3.935
repacking
activities which have to do with restoring and/or altering the packaging of a product, the packaging being adjusted so that it can be presented to the customer in the restored and/or altered form

3.936
repetitive manufacturing (flow manufacturing)
production of discrete units, usually planned and executed to a rate based schedule, usually at relatively high speeds and volumes

NOTE Material tends to move in a continuous flow during production, but different items may be produced sequentially within that flow.

3.937
replacement
1. (with regard to sales) sales resulting from the replacement by the customer of previously purchased durable products;

2. (with regard to materials) material which in a later edition of the specification of a certain application, will replace a certain other material

3.938
replenishment
1. act of providing customers with fresh stocks or the quantities resulting from such action;

2. filling up of the working stock from the bulk stock

NOTE The actual or planned replenishment of a product or component. The replenishment quantities should be created in response to a demand for products or components or in anticipation of such a demand.

3.939
replenishment lead time
period of time between the moment the decision is taken that a product is to be replenished and the moment the product is available for use

3.940
replacement parts (spare parts)
components provided during overhaul, repair or maintenance to restore worn, damaged or missing items

3.941
replenishment period (replenishment interval)
time between successive replenishment orders

3.942
required capacity
total units of capacity of a resource required to process a specified quantity of product

3.943
requirements calculation
calculation of what is needed to satisfy demand, based on the bill of materials of products ordered

3.944
rescaling
redefinition of a bill of materials for process manufacturing using factors and / or properties that may be non-linear

3.945
rescheduling
process of changing delivery or operation due dates, usually as a result of their being out of phase with when they are needed

3.946
reservation
see: allocation

3.947
resource
any facility in terms of man hours, storage, stock levels, buildings, equipment, capital investment etc. for executing the business plan and/or the master production plan

3.948
resource availability
percentage of time that a resource, worker or a machine is capable of working

3.949
resource requirements planning (RRP, rough-cut capacity planning, rough-cut resource planning)
process of converting the master (or plan and/or the master production planning) schedule into the impact on key resources, such as man hours, machine hours, storage, stock levels etc.

NOTE 1 The purpose of this is to evaluate the plan prior to attempting to implement it.

NOTE 2 Product load profiles or bills of resources could be used to accomplish this.

3.950
resource allocation
reservation of production capacity or of materials in order to produce a particular product

3.951
response time
time lapse or average delay between the initiation of a transaction and the results of the transaction

3.952
restacking
operation to remove goods from one stack and transfer them to another stack next to it, to enable access to a particular item in the first stack

NOTE In some cases the goods or unit loads restacked before remain at their current location or in other cases they are returned to their former stack after the requested retrieval was realised.

3.953
retailer
business that takes title to products and resells them to final customers or consumers

3.954
retrieval
operation to remove stored units from a store, loading the storage unit at the storage location, moving it to and delivering it at the discharge point

NOTE Opposite to ‘storage’.

3.955
retrieval strategy
strategy determining the sequence of retrieval orders and selecting a storage location if more than one storage unit of the requested sort exists in the storage area

NOTE Criteria might be the shortest retrieval time, the minimal empty running distance, a uniform utilisation of resources or a uniform availability of sorts in different storage lanes.

3.956
reverse distribution
collection and delivery of used, damaged, or outdated products and/or packaging from end-users to retailers and distributors or to manufacturers

3.957
reverse logistics
process of designing, planning and controlling the return and re-use of used products and packaging in order to conserve resources and protect the environment

NOTE It includes reverse distribution, which causes goods and information to flow in the opposite direction of normal logistics activities.

3.958
ro / ro (roll-on/roll-off)
facility for a road vehicle to be driven on and off a ship or, as in the case of rolling road a train

3.959
road-rail trailer
road semi-trailer with retractable running gear to allow mounting on a pair of rail bogies for transport by rail

3.960
roller conveyor
conveyor consisting of a framework carrying rollers powered or freely rotatable by the passage of loads on the conveyor

3.961
rolling road
transport of complete road vehicles on low-floor wagons

NOTE In the context of vehicle maintenance a rolling road is a device for testing vehicles

3.962
rolling stock
collective term for locomotives, wagons, carriages and rail vehicles

3.963
rough cut capacity planning (RCCP), (rough cut resource planning)
process of converting the master production schedule into requirements for key resources, including labour, machinery, warehouse space, suppliers' capabilities, and, in some cases, money

NOTE 1 Its purpose is to test the feasibility of the production plan and/or master production schedule before it is implemented.

NOTE 2 A simplified form of capacity planning that generally ignores work-in-progress and concentrates on key or critical resources.

3.964
route
1. (general) path (to be) taken to get from a starting point to a point of destination;

2. (in forwarding) path along which goods are (to be) transported;

3. (in manufacturing) planned sequence of work centres or work stations for the manufacture of a product

3.965
route card (process list, routing list)
document that shows the planned sequence of operations for the manufacture of a product or part and that usually serves to identify the job and record its progress

NOTE It shows in particular the operation number, operation description and work centre used for each operation.

3.966
routing
1. (transport routing) determination of the route(s) that people, goods, materials and/or means of transport have to follow inside or outside the company;

2. (in manufacturing) sequence of operations required to manufacture an item

3.967
running-in
(with regard to production) process of taking a product into production for the first time or starting to produce it again, and / or using a production resource in the production process for the first time or starting to use again

3.968
run quantity
number of identical parts that are produced at a particular work centre before changing to make some other part.

[See also: batch quantity]

3.969
safety capacity
planning or reserving of excess manpower and / or equipment above known requirements to support unexpected demand

3.970
safety stock
stock which serves as a buffer for unexpected events such as differences between forecasted and actual consumption and between expected and actual delivery times

3.971
safety time
time allowance introduced by setting an earlier completion date to provide a cushion of time and stock against upsets such as forecast errors, unusual customer demand, late delivery etc.

3.972
sailing stock
see: goods-in-transit, stock-in-transit

3.973
sale promise date
date by which the goods specified in the sales order are promised by the supplier to be delivered and made available to the purchaser

3.974
sales and operations planning (S&OP)
process that provides management the ability to strategically direct its business to achieve competitive advantage on a continuous basis by integrating customer-focused marketing plans for new and existing products with the management of the supply chain

3.975
sales forecast
formal statement established on the basis of estimates or statistical calculations of future sales quantities

3.976
sales order
list of all sorts and quantities of goods a customer requests to a delivery address and date or to render specific services.

[See also: customer order]

3.977
sales order processing (SOP)
total of all administrative operations, from the receipt of the orders to invoicing and preparation of the forwarding instruction needed to deliver the products or services stated in the order

NOTE Sales order processing forms one of the inputs to the master production schedule.

3.978
sales plan
plan drawn up by a sales organization that states how many individual finished products or product groups will be sold to customers per unit of time

3.979
sales programme
forecast of the end items a company plans to sell to its customers during the course of a period (usually a year or a quarter)

NOTE 1 It is distinguished from the master schedule by the fact that it is a sales view and does not necessarily take manufacturing planning capacity into consideration.

NOTE 2 The sales programme is based on history and intuition and will include new products, products whose sales pattern will be influenced by sales campaigns and special offers, products whose sales patterns may change or be influenced by the introduction or discontinuance of a competitive product and anticipated special orders.

3.980
scanner
electronic device that optically, magnetically or electronically converts coded data into electrical control signals to start or stop a process / operation or read a bar code

3.981
schedule (to)
to plan the times for starting and/or finishing activities

3.982
schedule (manufacturing schedule)
list or chart showing planned starting and/or finishing times for work tasks

NOTE Examples of schedules are shipping schedule, manufacturing schedule or supplier schedule.

3.983
scheduled delivery
item that is scheduled to be delivered to the customer

NOTE Scheduled implies a known delivery date.

3.984
scheduled receipt
open work order or open purchase order on its due date or at its due time, cf. material requirements planning (MRP)

NOTE 1 Scheduled receipts will be treated as part of available stock during the netting process for the time period in question.

NOTE 2 Scheduled receipt dates and quantities are not normally altered automatically by the MRP system. Further, scheduled receipts are not exploded into requirements for components as MRP logic assumes that all components required for manufacture of the product type concerned have been either allocated or issued to the shop floor.

3.985
scheduled time of arrival
planned date and time of arrival in a certain (air)port or any other entry point in the supply chain

3.986
scrap
1. material outside of specifications and possessing characteristics that make rework impractical;

2. items of material discarded as being incapable of being rectified or salvaged within the process

NOTE It may be possible to recycle scrap for the manufacture of raw material or other materials from which scrap has originated.

3.987
scrap factor
percentage factor in the product structure used to increase gross component requirements to account for anticipated loss within the manufacture of a particular product

3.988
season
period in the year characterized by a particular event, feature or circumstance.

[See also: seasonal effect]

NOTE With regard to the goods flow the season takes its origin from the market (e.g. relatively highsales of refrigerators just before the summer).

3.989
seasonal component
part of the incoming goods, factory deliveries, outgoing goods, deliveries, production, consumption, sales, demand, stocks and shipments etc. caused by the season

3.990
seasonal correction
1. correction of a time series or a figure from a time series for the seasonal effect;

2. see: seasonal component

3.991
seasonal demand
periodically (generally yearly) recurring variation of (monthly) demand

3.992
seasonal effect
results of the phenomena that certain activities show a dependency on the yearly season

3.993
seasonal index
set of numbers, giving relative values of demand during periods of a year

NOTE Seasonal index is used to modify forecasts obtained from any forecasting technique that ignores seasonal effects.

[See also: demand pattern]

3.994
seasonal stock
1. stock which is formed in order to be able to satisfy a demand with seasonal fluctuations with a production level that does not fluctuate at all or that varies to a lesser extent than the demand;

2. stock arising from seasonal production;

3. calculated stock which arises from the difference between the monthly breakdown (of sales) and the monthly intake quantities

3.995
sea way bill
non-negotiable document that evidences a contract for the carriage of goods by sea and the taking over of loading of goods by the carrier, and by which the carrier undertakes to deliver the goods to the consignee named in the document, cf. airway bill

3.996
semi-finished product sequencing
product that is incomplete awaiting final operations determining the order in which a manufacturing facility is to process a number of different jobs

3.997
semi-trailer
any vehicle intended to be coupled to a motor vehicle in such a way that part of it rests on the motor vehicle and a substantial part of its weight and of the weight of its load is borne by the motor vehicle

3.998
serial number traceability
ability to trace the origin of any critical component by maintaining records linked to the items serial number.

[See also: lot traceability]

3.999
semi-unique item
component or sub-assembly that is found in the same quantity in more than one but not in all products of the total range of products under consideration

NOTE A component or sub-assembly that is found in all products under consideration, but in varying quantities, is treated as common for the basic quantity and as unique or semi-unique for the additional quantity.

3.1000
sequencing
determining the order in which a manufacturing facility is to process a number of different jobs

3.1001
service
set of functions offered to a user by an organisation

3.1002
service level (level of service)
1. measure for the extent to which customer orders can be executed at delivery conditions normally accepted in the market;

2. parameter in a model for safety stock calculations expressing the strategy for the accepted risk that a customer order meets a stock-out situation.

[See also: customer service level]

3.1003
service parts (repair parts, spare parts)
1. parts to replace corresponding parts of a product to maintain the original function of the product;

2. parts used for the repair and/or maintenance of an assembled product.

NOTE 1 The original part may then be repaired.

NOTE 2 The part which is intended to replace another one in a certain product may be called the “exchange part”.

3.1004
service parts bill of materials
bill of materials for components or assemblies used to service or repair finished product or assembly

NOTE A bill of this type becomes necessary when a part or assembly being sold as a replacement requires some parts such as joints or gaskets that normally are components of the next higher level assembly in the finished product bill of material.

3.1005
set-up cost
cost of preparing a facility for the processing of a specific part, including the cost of paperwork.

[See also: changeover cost]

3.1006
set-up time
time required for preparing machines and other production resources for carrying out operations

3.1007
shelf life
specified length of time prior to use for items that are inherently subject to deterioration are deemed to remain fit for use under prescribed conditions

3.1008
shipment
separately identifiable collection of one or more goods items transported or available to be transported together

NOTE A shipment can be transported successively in different consignments.

3.1009
shipper
individual or organisation that prepares a bill of lading by which a carrier is directed to transport goods from one location to another

3.1010
shipping area
see: marshalling area

3.1011
shipping frequency
number of times per standard period of time that shipments are (or will be) despatched

3.1012
shipping label
label attached to a shipping unit, carrying one or more data elements which identify and describe the shipping unit and its contents

3.1013
shipping note
see: despatch note

3.1014
shipping unit
quantity of goods shipped together to a customer

3.1015
shop calendar
calendar of workable days used in a factory for planning purposes, expressed in either numbered days or calendar days

3.1016
shop floor control
function of routing, scheduling and issuing work to be performed on a shop floor; assigning priority to each shop order; maintaining records of work in progress; and conveying information about the status of shop orders compared to plan to production management

3.1017
shop order
see: work order

3.1018
shop planning
coordination of material handling, material availability, the set-up and tooling availability so that a job can be done on a particular machine.

[See also: shop scheduling]

NOTE Shop planning is often part of the dispatching function, and the term shop planning is sometimes used interchangeably with dispatching although dispatching does not have to necessarily include shop planning. For example, the selection of jobs might be handled by the centralized dispatching function while the actual "shop planning" might be done by the foreman or one of his representatives.

3.1019
shop scheduling (operations scheduling)
assignment of starting or completion dates to operations or groups of operations to show when these shall be done if the work order is to be completed on time

NOTE These dates are used in the dispatching or shop planning functions.

3.1020
short-term planning
planning relating to taking decisions which mainly have consequences for a short period (a number of months)

NOTE It is difficult to give a criterion for the difference between short and long periods since this depends on the nature of the enterprise and the products to which the planning relates.

3.1021
shortage
negative difference between actual available or delivered quantity and the required quantity

3.1022
shortage costs (stock-out costs)
costs arising from the occurrence of a shortage or stock-out

NOTE Examples of these costs are:

— loss of goodwill;

— additional expediting;

— holding stock of associated parts until the shortage is cleared;

— production shortages.

3.1023
shortest process time rule (SPT)
dispatching rule which directs the sequencing of jobs in ascending order by processing time

NOTE Following this rule, the most jobs per time period will be processed. As a result, the average lateness of jobs is minimized, but some jobs will be very late.

3.1024
shrinkage
reductions of actual quantities of items in stock, in process, in transit

NOTE The loss may be caused by scrap, theft, deterioration, evaporation etc.

3.1025
shrinkage factor (shrinkage rate)
percentage factor in the item master record that compensates for expected loss during the manufacturing cycle either by increasing the gross requirements or by reducing the expected completion quantity of planned and open orders

NOTE The shrinkage factor differs from the scrap factor in that the former affects all uses of the part and its components. The scrap factor relates to only one usage.

3.1026
single cycle ordering
ordering system in which the year is divided into equal periods and in which the orders are issued in balanced product sets, each covering the requirements for one period

NOTE Orders are issued just before the start of a period for completion by the end of that period.

3.1027
single-level back flush
form of back flush that reduces inventory on only the next-level-down parts used in an assembly or subassembly

3.1028
single-level bill of material
display of those components that are directly used in a parent item

NOTE It shows only the relationships one level down.

3.1029
single level where-used
single-level where-used for a component lists each parent where that component is directly used and in what quantity

NOTE This information is usually made available through the technique known as "implosion".

3.1030
single minute exchange of die (SMED, quick change-over)
method of analysing the activities needed for exchange of die or tool aiming to shorten the exchange time by separating the activities to be done when the machine has been stopped (Inside Exchange of Die (IED)) and the activities which can be performed in advance during run of the machine or after (Outside Exchange of Die (OED))

3.1031
single sourcing
selecting of and working with one supplier for a certain item

3.1032
single working cycle
materials handling operation describing a defined sequence of activities (such as loading, transporting, unloading and returning empty) at the end of which the equipment has returned to its starting position and ready to start the same sequence again

NOTE In a store a single working cycle exists when either the storage operation or the retrieval operation is carried out.

3.1033
skeletal trailer
semi- or full trailer consisting of a chassis alone, but which is fitted with twist locks so as to carry containers and swap bodies

3.1034
slack time
calculated time span within which an event has to occur within the logical and imposed constraints of the network, without affecting the total project duration

NOTE 1 It may be made negative by an imposed date.

NOTE 2 The term slack is used as referring only to an event.

3.1035
slack time rule
scheduling rule that directs the sequencing of jobs based on (days left x hours / days) – (standard hours, left) = priority

3.1036
slow mover
product delivered or used with a low frequency or in relatively low numbers per period

3.1037
slow moving stock
stocks of materials or products with a slow and mostly irregular rate of usage

3.1038
smoothing (load levelling)
spreading orders out in time or scheduling locations so that the amount of work to be done in sequential time periods tends to be evenly distributed and is achievable

3.1039
soft allocation
allocation of material to a manufacturing order or a customer order from stock on hand or on order, irrespective of from which lot or delivery the allocation is made

3.1040
sourcing
process of identifying a company that provides a needed good or service

3.1041
split batch (split lot)
manufacturing order quantity that has been divided into two or more smaller quantities usually after the order is in process

3.1042
split delivery
method by which a larger quantity is ordered on a purchase order (e.g. to secure a lower price) but delivery is divided into smaller quantities and spread out over several dates to control stock investment, save storage space etc.

3.1043
spot demand
demand, having a short lead time, that is difficult to estimate

3.1044
spreader
(in cargo handling)

1. device used for lifting containers and unitised cargo;

2. beam of frame that spreads the slings during cargo operations;

3. mechanism connecting the lifting cables on a crane or gantry to a container

NOTE A spreader has four adjustable fixing points designed to connect with the upper twistlock corners on 20' or 40' containers.

3.1045
s-Q ordering system
ordering system with a fixed re-order level “s” , a fixed order quantity “Q” and variable order intervals

[See: ordering system]

NOTE When the stock becomes smaller than the level “s” the quantity “Q” is ordered.

3.1046
s-S ordering system
ordering system with a fixed re-order level “s”, a variable order quantity and variable order intervals.

See: ordering system

NOTE When the stock becomes smaller than the level “s” order is placed for the quantity necessary to replenish the stock to a level “S”.

3.1047
S-T (ordering) system
ordering system with variable order quantities and fixed order intervals

NOTE If the (economic) stock is smaller than “S” at the fixed order moment, a procurement order is placed for a quantity such that the (economic) stock becomes equal to the level “S”. “S” is calculated in advance and is periodically harmonised with any change in expected demand and/or delivery time and other decisive variables. “T” is the fixed order interval

3.1048
stackability
specific characteristic of goods or unit loads to enable them being put sturdily and safely on top of each other because of their geometric shape as well as their ability to withstand the effects of forces from top

3.1049
stacker crane
materials handling equipment for overhead transportation of goods in the space with the goods being carried by use of forks or spikes

NOTE Stacker cranes have a vertical beam fitted with a support platform and move along aisles for storing and retrieving items from racks.

3.1050
stacking waiting time
waiting time that occurs when cost considerations prevent a particular activity from being started until sufficient items to be processed are available, or when processing takes place at fixed times

3.1051
standard batch quantity (SBQ)
quantity of a parent that is used as the basis for specifying the material requirements for production

NOTE 1 The "quantity per" will be expressed as the quantity to make the SBQ, not to make only one of the parent.

NOTE 2 Often used by manufacturers who use some components in very small quantities, and / or process-related manufacturers.

3.1052
standard performance
rate of output which qualified workers can achieve without over-exertion as an average over the working day or shift provided they adhere to the method and provided they are specially motivated to apply themselves to their work

3.1053
standard product
product that is delivered to a standard configuration, that excludes any customer variations

3.1054
standard stock
stock of a particular product type that is set as the standard for a particular period of time, expressed in quantitative or financial terms

3.1055
standardisation
activity of establishing, with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context

NOTE 1 In particular, the activity consists of the processes of formulating, issuing and implementing standards.

NOTE 2 Important benefits of standardization are improvement of the suitability of products, processes and services for their intended purposes, prevention of barriers to trade and facilitation of technological co-operation.

3.1056
standing order
order to deliver a particular quantity of goods per period until further notice

3.1057
status reason
explanation or justification of the reported status of consignments, goods and / or equipment at any point in time or location, within the full transport or logistical chain

3.1058
stochastic requirements calculation
determination of the materials and components required in a certain period of time on the basis of extrapolation of historical data, obeying to some stochastic pattern

3.1059
stock
materials in a supply chain or in a segment of a supply chain, expressed in quantities, locations and/or values

NOTE 1 Stock can be situated in a pipeline, a warehouse, a store, in production, on a vehicle, in reception, etc., regardless of the actual ownership of these materials.

NOTE 2 Inventory, when used as a generic term, is synonymous with stock. This use is common in the USA and extensive in the UK.

NOTE 3 'Stock' was originally the physical article(s) and 'inventory' was a list representing it, but the two terms have become inter-changeable in use.

3.1060
stock carrying costs
costs associated with having stock

NOTE 1 These costs consist of:

— interest on the invested capital;

— costs associated with the space taken up by the stock;

— costs associated with the risk of the price dropping or being unable to sell the product;

— administration, insurance, auditing and control.

NOTE 2 In determining the level of the stock costs a distinction will be made between:

1. calculation of the costs in terms of cost price;

2. calculation of the costs for establishing the optimum stock level (economic trade-off).

3.1061
stock control
systematic regulation of stock levels with respect to time and quantity

3.1062
stock cover
period of time the stock on hand will last at an assumed rate of consumption

3.1063
stock in transit (in-transit stock)
materials moving between locations, usually separated geographically, e.g. finished goods being shipped from a plant to a distribution centre

3.1064
stock keeping unit (SKU)
item at a particular geographic location separately defined for stock keeping purposes

3.1065
stock level
quantity based measure of the stock in the system

3.1066
stock location system
system where all places within a warehouse are named and numbered to facilitate storage and retrieval of stock

3.1067
stock management
planning and control of the quantities, qualities and location of stocks

3.1068
stock norm
ratio of stock to e.g. sales, set as a standard and expressed as a percentage, or as a factor or as a number of days, weeks or months.

[See also: target stock]

NOTE The stock norm is determined by taking into account:

— safety stock;

— production batch stock or shipment batch stock;

— normal seasonal stock;

— normative pipeline stock.

3.1069
stock on hand
see: physical stock

3.1070
stock on hold
see: blocked stock

3.1071
stock on order
quantity represented by the total of all out-standing orders

NOTE The on order balance increases when a new order is released, and it decreases when material received to fill an order or when an order is cancelled.

3.1072
stock order
order to replenish stock as opposed to an order to make a particular product for a specific customer

3.1073
stock out
occurrence of a zero stock balance, not necessarily reflecting a shortage

3.1074
stock out costs
see: shortage cost

3.1075
stock out ratio
number of line items incurring stock-outs during a period to total line items ordered

NOTE The stock-out is a measure of the effectiveness with which a company responds to actual demand.

3.1076
stock out risk
accepted risk of having a shortage of stock of a stock type. It is used in calculating the safety stock

3.1077
stock point
1. (supply chain) point in a supply chain the purpose of which is to keep items available;

2. (production flow line) defined location next to the place of use on a production flow line to which materials are brought as needed and from which material is taken for immediate use

3.1078
stock policy
policy with regard to the extent to which stocks should be kept and where and how this should be done

3.1079
stock ratio optimisation (STROP)
ordering method that records the ratio of stock to demand trend at regular intervals and in which items are ordered for stock replenishment in strict sequence, ordering first those items with the lowest time cover

NOTE STROP is a stock base ordering system that is used by factories that make many different types of components or products for stock.

3.1080
stock reconciliation
comparison between the physical and recorded stock quantities and the resolution of differences between these two quantities

3.1081
stock shrinkage
losses resulting from scrap, deterioration, pilferage etc.

3.1082
stock turnover (stock turn rate) (stock turn)
ratio of the deliveries or consumption in a particular period of time and the (average) stock in that period of time

NOTE It indicates how many times the stock is delivered or consumed in a particular period of time.

3.1083
stockless purchasing and production
buying and consuming material, parts, and supplies for direct utilisation by the departments involved, cf. zero inventories (ZI)

NOTE Stockless purchasing and production is used as an alternative to receiving material, parts and supplies into stores and subsequently issuing them to departments.

3.1084
storage
activity of placing goods into store, or the state of being in store

NOTE Sometimes this term is used as a synonym for store.

3.1085
storage area (storage zone)
area in a store in which goods of equal characteristics and similar treatment are stored

NOTE One storing area can contain several storage areas.

3.1086
storage location
place, rack, space, silo or bin for storing goods that can be identified by co-ordinates, a consecutive number or a name

3.1087
store
physical location of a stock point

3.1088
stores requisition
internal document or electronic instruction to issue a product, material or part from a store

3.1089
storing
process of keeping goods on sites provided for that purpose or in appropriate spaces to bridge the time between their arrival and their use

3.1090
stowage
placing and securing of cargo or containers on board of or in a means of transport or container

3.1091
straddle carrier
wheeled vehicle designed to lift and carry shipping containers within its own framework

NOTE It is used for moving, and sometimes stacking, shipping containers at a container terminal.

3.1092
straddle truck
stacking lift truck with outriggers, fitted with a fork the arms of which are located between the outriggers and where the load centre of gravity is always within the stability polygon

3.1093
strategic planning
determining the objectives the company wishes to achieve, the outlines of the policy to be adhered to in order to achieve these objectives and laying down ensuing strategic decisions with regard to growth, marketing, research and development, investment, financing and other functional areas

3.1094
strategic stock
stock of goods of essential importance for the continuation of the production process and which is built up in order to compensate for long hold-ups of incoming goods (caused by strikes and political difficulties etc. in a particular country or region)

3.1095
stripping (devanning)
(in cargo handling) unloading of cargo out of an inter-modal transport unit (ITU)

3.1096
stuffing (vanning)
(in cargo handling) loading of cargo into an inter-modal transport unit (ITU)

3.1097
summarized bill of material
form of multi-level bill of material, which lists all the parts and their quantities required in a given product structure

NOTE Unlike the indented bill of material it does not list the levels of manufacture and lists a component only one for the total quantity used.

3.1098
sundries
1. (general) miscellaneous;

2. (in goods movement) total quantity of incoming and outgoing goods flow and stock corrections which are not specified separately, expressed in quantitative or financial terms. E.g. stock differences, free replacement, breakage and samples

NOTE If the quantity is positive, the total is an outgoing flow; if it is negative the total is an incoming flow.

3.1099
super bill of material
type of planning bill, located at the top level in the structure, which ties together various modular bills (and possibly a common parts bill) to define an entire product or product family

NOTE The "quantity per" relationship of a super bill to modules represents the forecasted percentage population of each module. The master scheduled quantities of the super bill explode to create requirements for the modules which are also master scheduled.

3.1100
super flush (multi-level back flush)
technique to deduct component usage from stock levels using the complete bill of material, based on the count of finished units produced and/or transferred to finished goods stock

3.1101
supervisory control and data acquisition (SCADA)
shop floor data collection system where machine and testing activities are collected and monitored on-line and deviations can be corrected automatically; or if un-correctable without intervention or shut down

3.1102
supplier lead time
period of time between the moment the order confirmation is given by the supplier (order confirmation date) and the moment the goods are actually shipped (date of actual departure or invoice date)

3.1103
supplier rating (vendor rating)
systematic evaluation of the performance of suppliers in respect to quality, delivery by due date, price and other factors

3.1104
supply
quantity of goods delivered by a supplier to a customer in a particular time period and expressed in quantitative or financial terms

3.1105
supply chain
sequence of events, which may include conversion, movement or placement, which adds value

3.1106
supply chain management
organization, planning, control and execution of the products flow from development and purchasing, through production and distribution, to the final customer in order to satisfy the requirements of the market cost-effectively

3.1107
supply chain operations reference model (SCOR model)
analysis tool for the logistics processes in a supply chain

NOTE This is a protected term and is the property of the Supply Chain Council inc.

3.1108
supply scheduling (shipment scheduling)
process of making up and carrying out deliveries on the basis of orders or a supply plan with regard to both the transport and forwarding aspects, taking account of the availability of the goods and in some cases the invoicing

3.1109
supply warehouse
warehouse that stores raw materials; goods from different suppliers are mixed at the warehouse and plant orders are assembled

3.1110
surplus stock
stock for which there is no foreseen requirement

3.1111
swap body
container for the transport of cargo that can stand individually when being loaded or unloaded and can be transferred between road vehicles and railway wagons

3.1112
synchronized manufacturing
1. approach to manufacturing which includes a consistent set of principles, procedures and techniques which relate to every decision and action to achieve overall goals (of Just-in-Time);

2. type of production scheduling based largely on the theory of constraints that aims to achieve on-time delivery by co-ordination of the disparate production rates of the various processes involved

3.1113
target stock
stock level that an enterprise plans to achieve at a certain date.

[See also: stock norm]

3.1114
technical variants
standard products where there is no alternative from a customer's point of view, although some technical differences might occur between the products

3.1115
telpher system
overhead materials handling equipment with cars that are often equipped with a hoisting gear

NOTE For loading, moving and unloading goods the cars move along horizontal, upward or downward inclined paths on spandrel-braced or hanging rails with straight lines or curves and switches.

3.1116
terminal
place where modal change takes place

NOTE It is a location on either end of a transportation line including; office, servicing and handling facilities.

3.1117
terminal head store
type of store where receiving area and shipping area are situated at one and the same side of the building

NOTE Opposite to flow store (passage store).

3.1118
terms of delivery (delivery terms)
all the conditions agreed upon between a supplier and a customer with regard to the delivery of goods and / or services

[See: Annex C, Incoterms]

3.1119
terms of freight
conditions (to be) agreed upon between a carrier and a freight forwarder/consignor about the type of freight and charges due to a carrier

3.1120
terms of payment
terms and methods of payment for goods and services, agreed upon between a supplier and a customer.

[See: UN Rec. 17]

3.1121
theoretical capacity
maximum output capability, allowing no adjustments for preventative maintenance, unplanned downtime etc.

3.1122
theory of constraints (TOC)
concept for identifying and overcoming those limitations (“bottle-necks”) within a system that restrict performance or the achievement of goals

NOTE Source E.M. Goldratt, 'Theory of constraints' North River Press Corporation, 1999.

3.1123
third party logistics (3PL)
delegation of all distribution related activities by a supplier, producer or distributor to a specialist company

3.1124
throughput
total volume of production moving through a facility (machine, work centre, department, plant, or network of plants)

NOTE Throughput excludes production of quantities made ahead of schedule or in excess of schedule.

3.1125
throughput time
time taken to complete a specified stage of manufacture or a series of such stages

3.1126
tilt
light tarpaulin sheet surrounding the frame of a swap body or covering an open-top trailer

3.1127
time bucket
(in planning and forecasting) period of time, that is used to accumulate demand and by which supplies are planned or scheduled

NOTE A time bucket is usually greater than one day.

3.1128
time fence
point in future time at which policies or operating constraints or planning criteria change

3.1129
time phased order point (TPOP)
method used in material requirements planning (MRP) for independent demand items, where gross requirements come from a forecast, not via explosion

3.1130
time phasing
technique of expressing future demand, supply, and inventories by time period

NOTE Time phasing is one of the key elements of material requirements planning.

3.1131
time series
series of values of a particular variable at a number of successive points of time, or with respect to a number of successive periods, expressed in quantitative or financial terms

3.1132
time series analysis
analysis of historical data laid down in series, in order to enable conclusions and/or expectations regarding future events to be drawn on the basis of the regularities found in this time series

NOTE The time series is studied with regard to the occurrence of trend-wise, seasonal and incidental fluctuations.

3.1133
time to customer
dwell time of material in the pipeline between it being raw material and its delivery to its ultimate consumer

3.1134
time to market
total time required to conceive, design, develop and present a new product to its market

3.1135
tooling
technique where tools added to a machine or other work centre to adapt it for the manufacture of a particular part or set of similar parts

3.1136
top assembly
see: final assembly

3.1137
total float
float of an activity obtained by deducting the duration of that activity from the difference between the last possible starting time of the following activity and the earliest possible starting time of the activity itself

3.1138
total lead time
see: cumulative lead time

3.1139
total quality management (TQM)
management philosophy with the aim of continuous participation and co-operation of all members of the organisation in the improvement of products, services and activities

NOTE TQM is directed towards achieving customer satisfaction and the objectives of the organisation.

3.1140
tower rack
see: carousel rack

3.1141
traceability
see also: lot traceability and serial number raceability

3.1142
tracing
recording and retrieving information required for lot traceability (q.v.) or serial number traceability (q.v.)

3.1143
track (to)
monitor the physical location of an item, a shipment or a vehicle

3.1144
track gauge
distance between the internal sides of rails on a railway line

3.1145
tracking
(in transport) action of retrieving information concerning the status and whereabouts of cargo, cargo items, consignments or equipment

3.1146
trade data interchange (TDI)
international standard method of communication for exchanging information regarding trade transactions between organizations in a computer readable form

NOTE The message structuring method has been defined under auspices of the United Nations Economic Commission for Europe (CECE).

3.1147
trade transaction
agreement between two or more parties for the supply of specified quantities of goods and / or services according to agreed and/or imposed conditions

3.1148
traffic
1. movement of means of transport;

2. number of passengers, quantity of cargo, vehicles etc. carried over a certain route

3.1149
transfer
process of moving goods or unit loads from one storage location to another

3.1150
transfer store
store where parts made are accumulated into products sets until they are ready for use and required for issue to assembly or to a customer

3.1151
Transport International Routier (TIR)
international Customs transit system for goods carried by road

NOTE It is based on 5 essential principles – the 5 pillars of the TIR system:

- secure vehicles or containers;
- international chain of guarantee;
- TIR carnet;
- mutual recognition of customs control;
- controlled access.

3.1152
TIR carnet
customs transit document permitting facilitation of international trade and international road transport, under cover of which transport of goods is carried out under the procedure called "TIR procedure" laid down in the TIR Convention

3.1153
transformation process
set of coherent activities which change form, character, appearance or disposition of input

3.1154
transhipment
1. (in transport) action by which goods are transferred from one means of transport to another during the course of one transport operation;

2. (customs) customs procedure under which goods are transferred under customs control from the importing means of transport to the exporting means of transport within the area of one customs office which is the office of both importation and exportation

3.1155
transit
1. (general) act of passing, or being conveyed through, a location or area;

2. (customs) customs procedure under which goods are transported under customs control from one customs office to another

NOTE 1 The customs authorities normally allow goods to be transported under customs transit in their territory:

a) from an office of entry to an office of exit (through transit);

b) from an office of entry to an inland customs office (inward transit);

c) from an inland customs office to an office of exit (outward transit);

d) from one inland customs office to another inland customs office (interior transit).

NOTE 2 Customs transit movements as described in a) to c) above are termed "international customs transit" when they take place as part of a single customs transit operation during which one or more frontiers are crossed in accordance with a bilateral or multilateral agreement.

3.1156
transit lead time
period of time between departure time of goods from their initial location and the physical arrival of those goods at the receiving organisation

3.1157
transport
assisted movement of people and/or goods

NOTE The term “transport” in general is used for movements supported by means.

3.1158
transport centre
premises and facilities, related to freight transport services, e.g. facilities for transhipment, serving a number of transport organisations

NOTE A transport centre is often owned and operated by several of the companies being served.

3.1159
Transport International Routier (TIR)
international road transport convention facilitating the cross-border movement of goods by simplifying customs procedures

3.1160
transport packaging
packaging used for transport, but excluding auxiliary transport means such as box pallets or containers

3.1161
transport planning
planning of the method of transport and the required transport capacity

3.1162
transport service
service provided for the transport of goods, persons, etc. over a defined route

3.1163
transport status
1. position and condition of consignments, goods and / or equipment at any point in time or place within the full transport or logistical chain (UN TDED Rec. 24);

2. report of the position and /or condition of consignments, goods and /or equipment

3.1164
transport status code
coding system for transport status

[See: UN TDED Rec 24]

3.1165
transport time
time required to transport items from one location to another

NOTE Transport time does not include waiting times before loading or after unloading.

3.1166
twenty foot equivalent unit (TEU)
standard unit (6,10 m) used to express a number of containers of various lengths and for describing the capacities of container ships or terminals

NOTE One standard 40' ISO Series container equals 2 TEUs.

3.1167
twist lock
fixing devices for securing ITU's to the carrying vehicle or vessel

NOTE For the technical issues there is an ISO-standard.

3.1168
two-bin system
pull ordering system used at a stock point which usually supplies the next stage in a production process, containing two identical batches, in which a supply batch is ordered when the first batch is completely used

3.1169
two-level MPS (master production scheduling)
master scheduling approach wherein a planning bill (of material) is used to master schedule an end product or family, along with selected key options, features and attachments

3.1170
unaccompanied transport
movement of complete road vehicles through another mode of transport (e.g. by ferry or train) not accompanied by the driver

3.1171
underload
extent to which the normal level of full capacity is not being used at a particular moment in the production process

3.1172
unfilled order
see: back order

3.1173
uniform product code (UPC)
system used in the USA for applying unique article numbers and bar codes to products

NOTE 1 The UPC bar code is a numeric only code, generally encoding 12 digits (UPC-A), though in specific circumstances shorter symbols (UPC-E), supplementary codes, and longer symbol architecture (UPC-D) are used.

NOTE 2 The international equivalent (of which UPC is technically a subset) is the European Article Number (EAN) system.

3.1174
unique item
component or sub-assembly that is found in only one product in the total range of products under consideration

NOTE A component or sub-assembly that is found in all products under consideration, but in varying quantities, is treated as common for the basic quantity and as unique or semi-unique for the additional quantity.

3.1175
unit load
load consisting of items or packages held together by one or more means and shaped or fitted for handling, transporting, stacking and storing as a unit

3.1176
unit of measure (UM)
standard measurement in which transactions of an item are recorded

NOTE 1 Examples of units of measure include: individual items, 1 000s of items, masses in kilograms, length in metres.

NOTE 2 Different units of measure may be used for the same item in different manufacturing sub-systems, for example steel washers might be purchased in kilograms, stored in boxes of 1 000 and issued in packs of 10. Conversion factors can also be recorded to enable the planning system to convert demands and supplies between the sub-systems.

3.1177
unit packing list
see: container manifest

3.1178
UN/LOCODE
code element representing the name of a port, an airport, inland clearance depot, inland freight terminal, or a location

3.1179
UN/EDIFACT (United Nations Electronic Data Interchange for Administration, Commerce and Transport)
user application protocol for use within user application systems for data to be interchanged electronically

3.1180
United Nations Standard Message (UNSM)
EDI message referred to as a UN/EDIFACT standardised message

3.1181
unplanned issue
issue transaction that updates the quantity on hand, but for which no allocation or order exists

3.1182
utilisation
1. ratio between the actual input of a process and the norm input;

2. ratio of used capacity and available capacity

NOTE Utilisation is the inverse of efficiency.

3.1183
value adding logistics (VAL)
additional activities carried out in a distribution centre to customise the product. Examples are packing, labelling, adding software, invoicing

3.1184
value density
value of one unit of volume of products

NOTE Usually expressed as value per m^3.

3.1185
variant
alternative product configuration

3.1186
vendor managed inventory (VMI)
stock of products held on the customer's site but managed and replenished by the supplier

NOTE The stock may be owned by either party dependent on the contract.

3.1187
vendor partnership
relationship (usually contractual) between supplier and customer whereby issues such product design, quality, price and supply administration are agreed so that both parties benefit

3.1188
vendor rating
see: supplier rating

3.1189
visual review system
simple stock control system where stock reordering is based on actually looking at the amount of stock on hand

NOTE Usually used for low-value items like nuts and bolts.

3.1190
volume / weight ratio
ratio of volume of goods to their mass

NOTE A ratio of m^3 per tonne is often applied in air transport, and can also be used as an aid for selecting the mode of transport (sea/air).

3.1191
waiting time
period of time between the moment an activity should start and the moment at which it actually starts

3.1192
warehouse (commercial store)
1. building specially designed for receipt, storage and handling of goods;

2. store for sales products

3.1193
warehouse space utilisation
ratio between the floor area of a store occupied by storage units and the total floor area of the store

3.1194
warehouse volume utilisation
ratio between the volume of a store filled with storage units and the total available volume of a store room (e.g. the overall internal space of a store shed)

3.1195
warehousing
activities of receiving, storing and handling goods in a store

3.1196
waste
1. by-product of a process or task with unique characteristics requiring special management control;

NOTE 1 Waste production can usually be planned and some what controlled. Scrap is typically not planned and may result from the same production run as waste.

NOTE 2 Usually the owner places no value on waste material.

2. (in just-in-time) anything that adds cost without adding value to the product or service

3.1197
waste disposal
processing and removal of waste to its final resting place or to a place where it can be re-used or recovered

3.1198
waste logistics
logistics activities dealing with waste such as collecting, sorting, disassembly, recovering and disposal

3.1199
way bill
see: consignment note

3.1200
where used list
listing of every parent item that calls for a given component and the respective quantity required from a bill of material

3.1201
withdrawals (issues)
1. removal of materials from stores;

2. transaction issuing material to a specific location, run or schedule

3.1202
wholesaler
intermediary between manufacturers and retailers who sells products to be retailed by others

3.1203
Wilson batch size formula (Camp batch size formula)
see: batch size formula

3.1204
work centre (machine centre)
set of work stations grouped for convenience of planning or work flow

3.1205
work-in-progress (WIP)
stock between storage points upon which work has been performed or that has been made ready for work to be started, but that has not been received into stock or made available for supply to an external customer

NOTE It is important when subdividing work in progress stock that adequate description is made. For example, work in progress stock could be subdivided into shop work in progress stock or subcontracted work in progress stock.

3.1206
work load (load)
quantity of work ahead assigned to a production facility ahead of time

NOTE Examples of production facilities are: a work station or a capacity group.

3.1207
work order (production order, manufacturing order, factory order, shop order, job order)
internal instruction conveying authority to proceed with the manufacture of a product, or parts, or the provision of a service

NOTE The quantity and completion date are normally specified in a work order.

3.1208
work station
smallest set of resources that, for the purpose of planning, costing and control, forms a productive unit at a particular location

3.1209
work-to list (dispatch list)
list of work orders in priority sequence which contains detailed information on the priority, location, quantity, and capacity requirements of each work order by operation

NOTE 1 Work-to lists are normally generated daily and arranged for individual work centres.

3.1210
work cycle
closed cycle materials handling operation.

NOTE Each cycle consists of the following phases: loading, moving, unloading and returning the empty load suspension device to a defined initial position.

[See also: combined working cycle / single working cycle]

3.1211
working stock
1. (in manufacturing) stock of materials, components and sub-assemblies which is needed for a particular period in order to enable the departments and production resources to work as efficiently as possible during that period;

2. (in warehousing) stock of products from which the order picking is carried out

3.1212
yield
usable amount or proportion of product produced in a manufacturing operation

NOTE Yields are often variable in process industries.

3.1213
zero inventories (ZI)
ultimate target for a stock turn that would produce zero cost of stock

NOTE The target of zero inventory is not achievable but provides a constant spur to moving material more quickly through a process.

Annex A
(informative)

Proposed structure for a logistics system

In the original prEN 12777 some of the terms were presented in accordance with the following framework:

1 General

Basic definitions:

- logistics

2 Systems of application

2.1 Commercial systems:

- business logistics

2.2 Non-commercial systems

3 Approaches

3.1 Material flow related approaches

3.1.1 Materials flow:

- materials flow
- supply chain

3.1.2 Logistics structures:

- assemble to order
- customer order decoupling point
- decoupling point
- engineer to order
- make and ship to stock
- make to order
- make to stock
- purchase and make to order
- stock
- stock point

3.2 Integrated logistics support:

- integrated logistics support
- life cycle assessment
- life cycle cost
- logistics support analysis

4 Areas / fields of application

4.1 Procurement logistics:

- procurement

4.2 Production logistics:

- production

4.3 Distribution logistics:

- physical distribution
- delivery

4.4 Product maintenance logistics:

- product maintenance

4.5 Waste logistics:

- reverse distribution
- waste logistics

5 Operations related to logistics

5.1 Physical operations

5.1.1 Packaging:

- packaging

5.1.2 Materials handling:

- materials handling

5.1.3 Storage:

- storage
- store
- warehousing

5.1.4 Transport:

- transport

5.1.5 Waste disposal:

- waste disposal

5.2 Information processing:

- back order
- open order
- order
- order processing
- ordering

5.3 Logistics related contracting:

- Incoterms
- third party logistics

6 Logistics management activities

6.1 General:

- demand management
- dependent demand
- independent demand
- just-in-time
- materials management
- physical distribution management
- stock management

6.1.2 Service:

- customer service

6.2 Planning:

- distribution requirements planning (DRP)
- distribution resources planning (DRP II)
- master planning
- material requirements planning (MRP)
- manufacturing resources planning (MRP II)
- planning
- planning horizon
- schedule (to)

6.3 Control:

- control (in decision making)
- dispatching
- fast mover
- kanban
- order point system
- production control
- production control
- pull system
- push system
- sequencing
- slow mover
- two bin system

7 Performance in logistics:

- bottle neck
- customer service level
- cycle time
- delivery reliability

- delivery time
- lead time
- efficiency
- logistics costs
- performance indicator
- stock turnover
- utilisation

In this publication this frame work has not been applied for the following reasons:

— it is easier for the user to find a definition when all terms are in strict alphabetical sequence;

— distinction between the terms defined in the main frame work and the rest of the terms may not be clear for the user;

— number of terms listed in the annex could also be placed into the frame work.

Therefore the working group has decided to arrange all the terms in alphabetical sequence.

Annex B
(informative)

Glossary of logistics related acronyms

ABC-analysis	Analysis of a situation where items are grouped
ABC-classification	Grouping of items in sequence of importance
ABC-zoning	Assignment of storage locations according grouped items
ADR	European Agreement on transport of Dangerous goods by Road
AGV	Automatic Guided Vehicle
AIDC	Automatic Identification and Data Capture
AMR	Advanced Material Request
APS	Advanced Planning and Scheduling
ASN	Advanced Ship Notice
AS/RS	Automatic Storage and Retrieval System
ATP	Available To Promise
AWB	Air Way Bill
B/L	Bill of Lading
B2A	Business to Administration
B2B	Business to Business
B2C	Business to Consumer
BOM	Bill Of Material
BOL	Bill Of Labour
B-Q	Batch Quantity replenishment (ordering system)
BPR	Business Process Re-engineering
BRP	Business Resource Planning
B-S	Batch Period Replenishment (ordering system)
CAD	Computer Aided Design
CAE	Computer Aided Engineering
CAM	Computer Aided Manufacturing
CIM	Computer Integrated Manufacturing
CMR	Convention relative au Contrat de Transport International des Marchandise par Route
CNC	Computerised Numerical Control
COT	Change Over Time
CPFR	Collaborative Planning, Forecasting, and Replenishment
CPM	Critical Path Method
CTD	Combined Transport Document
CRP	Capacity Requirements Planning
CTO	Combined Transport Operator
CTP	Capable To Promise
DFMA	Design For Manufacture and Assembly

DP	Decoupling Point
DP-1	Decoupling Point make and ship to stock
DP-2	Decoupling Point make to stock
DP-3	Decoupling Point assemble to stock
DP-4	Decoupling Point make to order
DP-5	Decoupling Point purchase and make to order
DRP	Distribution Requirements Planning
EC	European Community / European Commission
ECO	Engineering Change Order
ECR	Efficient Consumer Response
EDI	Electronic Data Interchange
EDD	Earliest Due Date
EDIFACT	Electronic Data Interchange for Administration, Commerce and Transport
EFD	Early Finish Date
EOQ	Economic Order Quantity
EPC	Electronic Product Code
ERP	Enterprise Resource Planning
ETA	Estimated Time of Arrival
ETD	Estimated time of Departure
ETO	Economic Trade Off
FAS	Final Assembly Schedule
FCL	Full Container Load
FEFO	First-Expires, First-Out
FEU	Forty Foot Equivalent Unit
FIFO	First In First Out
FLT	Fork Lift Truck
FMS	Flexible Manufacturing System
FPO	Firm Planned Order
GT	Group Technology
GTIN	Global Trade Item Number
ICC	International Chamber of Commerce
ICC-Incoterms	International Chamber of Commerce, delivery terms
ICS	International Chamber of Shipping
IPR	Inward Processing Relief (customs)
ISO	International Standards Organisation
ITU	Inter-modal Transport Unit
JIT	Just-In-Time
KPI	Key Performance Indicator
LCA	Life Cycle Assessment
LCC	Life Cycle Cost
LCL	Less than Container Load
LIFO	Last In, First Out Liner In, Free Out
LO/LO	Load-On/Load-Off
LSA	Logistic Support Analysis

MAA	Moving Annual Average
MAD	Mean Absolute value Deviation
MICR	Magnetic Ink Character Recognition
MPP	Moving Period Plan(ning)
MPS	Master Production Schedule
MRP I	Material Requirements Planning
MRP II	Manufacturing Resources Planning
NHA	Next Higher Assembly
OCR	Optical Character Recognition
OEM	Original Equipment Manufacturer
OPR	Outward Processing Relief (customs)
OPT	Optimised Production Technology
OS&D	Over, Short and Damage
OSI	Open Systems Interconnection
PAC	Production Activity Control
PDM	Product Data Management
PFS	Process Flow Scheduling
PI	Performance Indicator
PIC	Production and Inventory Control
PIM	Production and Inventory Management
3PL	Third Party Logistics
4PL	Fourth Party Logistics
PLC	Programmable Logic Controller
QA	Quality Assurance
PTF	Planning Time Fence
RCCP	Rough Cut Capacity Planning
RFID	Radio Frequency Identification
Ro/Ro	Roll-on/ Roll-of
ROQ	Re-Order Quantity
RRP	Resource Requirement Planning
SBQ	Standard Batch Quantity
SCADA	Supervisory Control and Data Acquisition
SCM	Supply Chain Management
SCOR-model	Supply Chain Operations Reference model
SKU	Stock Keeping Unit
SMED	Single Minute Exchange of Die
SOP	Sales Order Processing
SPT	Shortest Processing Time (priority rule)
s-Q	Fixed reorder level, fixed order quantity (ordering system)
s-S	Fixed reorder level, variable order quantity (ordering system)
S-T	Variable order quantity, fixed order moments (ordering system)
STROP	Stock Ratio Optimisation
TDED	Trade Data Elements Directory (UN)

TDI	Trade Data Interchange (UN)
TEU	Twenty Foot Equivalent Unit
TIR	Transit International Routier Transport Internationaux par Route Transport International de marchandise par la Route
TPOP	Time Phased Order Point
TQC	Total Quality Control
TQM	Total quality management
UM	Unit of Measure
UN	United Nations
UN/LOCODE	United Nations Location Code
UNR	United Nations Recommendation (for Trade Facilitation)
UNSM	United Nations Standard Message
UNTDED	United Nations Trade Data Elements Directory
UNTDID	United Nations Trade Data Interchange Directory
UPC	Uniform Product Code
VAL	Value Adding Logistics
VMI	Vendor Managed Inventory
WCO	World Customs Organisation
WIP	Work In Progress
ZI	Zero Inventory

Annex C
(informative)

Terms of delivery

List of some abbreviated delivery conditions according the “Incoterms” 2000

CIF	Cost, Insurance and Freight
CIP	Carriage and Insurance Paid to
DAF	Delivered At Frontier
CFR	Cost and Freight
CPT	Carriage Paid To
DDU	Delivered Duty Unpaid
DDP	Delivered Duty Paid
DEQ	Delivered Ex Quay
DES	Delivered Ex Ship
EXW	Ex Works
FAS	Free Alongside Ship
FCA	Free Carrier
FOB	Free On Board

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