Merlin Materials Management System Overvew

Version 1.0/2
14 February 1998

Document No. Merlin System Overview2.doc/1.0/2

Contents

1 Introduction

Overview

Merlin is an advanced computer system that supports the complete materials acquisition and usage process.

Merlin provides a setting where purchasing, expediting, inspection and shipping organisations operate in an intelligent and ergonomic environment. Merlin delivers quality and performance by:

- Improving communications between organisations and locations
- Timely access to vital information to make rational decisions
- Simplifying data entry to guarantee accuracy first time
- Intelligent support for the business processes

Merlin's main features are:

- Project based operation
- Requisition planning
- Expediting, inspection, shipping and receiving
- Optimised material requirements, visibility and tracking
- Organisational structures
- Cost control
- Integrated vendor and equipment catalogues
- Interfaces with engineering and finance systems

Main Functions

Requisitioning & Purchasing

Planning Merlin maintains a procurement plan for each requisition from a user defined precedence network. The plan shows planned, actual and forecast dates for each event. Merlin forecasts completion dates from reported progress. Float is calculated automatically from user specified and required-on-site dates. Merlin warns of critical or late delivery.

Requirements Major requisitions are identified at the start of a project for planning purposes. The requisition line item details are created by user input or automatically from the materials management function as the design requirements are finalised.

Unique tag numbers can be used to identify important pieces of equipment. Merlin checks that such tagged equipment is only purchased once.

Line items' descriptive specifications can be obtained automatically using unique identifier codes. Unique identifier codes enable Merlin to accumulate quantities across all requisitions and to identify their whereabouts.

Enquiry Requisitioners may suggest a selection of vendors to receive an enquiry or Merlin can automatically identify vendors from the required type of equipment. Merlin sends enquiries to the eligible vendors and helps evaluate their responses.

Split/Merge Sometimes it is desirable to split a requisition to place orders amongst a number of vendors. Merlin can divide a single requisition into several on a line item basis. Merlin can also consolidate several requisitions into one purchase order by merging line items.

Placing Purchase Orders — Merlin makes checks to ensure that purchase orders are complete before issue. Merlin has distinct functions for the raising, approval and issue of purchase orders, linked to a security scheme. Merlin can also issue provisional and copy purchase orders.

Revising Purchase Orders — Merlin provides facilities to collect proposed changes to issued purchase orders. Selected changes may be incorporated into a revised order with an audit trail. The revised order is then approved and issued. Proposed changes that were not included are retained as proposed changes.

Expediting

Enquiry — Merlin notes contacts with vendors, recording notes about the order and individual line items.

Material Forecast — Merlin records forecast ex-works dates and material quantities for line items.

Material Movement — Merlin creates and issues material movement documentation for given orders. Merlin keeps track of total quantities moved by line item and by unique identifier code across all orders.

Inspection

Requirements — Individual orders may be classified as requiring the materials to be inspected before release.

Visits — Merlin records estimated and actual dates of inspection visits with costs and invoicing information. At a visit the inspector may approve or refuse material for release.

Material Releases — Merlin tracks releases of material by line item and by unique identifier code across all orders. Documentation is generated automatically.

Material Failure — Merlin creates and issues documentation resulting from material failing inspection.

Transportation

Movements — Merlin tracks the movement of goods from the originating vendor to the final location through any number of intermediate locations.

Shipments — Merlin creates shipment documentation that identifies goods leaving a location. Each shipment comprises a number of packing lists. A packing list contains a number of entries, each being a quantity of a line item or an equipment part.

Receiving — Similarly, receiving documentation records goods arriving at each destination location. Merlin can identify shortages and surpluses by line item and by unique identifier code.

Materials Management

Principles — Merlin's materials management identifies optimum purchasing quantities by:

- Maintaining links with discipline based Bills of Materials
- Full visibility of material on requisition, on order, in transit etc.

Materials management relies on an Unique Identifier Coding (UIC) system for materials items. Merlin includes a simple UIC system, or an alternative system may be used.

QTO Requirement — Bills of Materials can be created for different disciplines. Each BOM identifies the current design requirement for each UIC, with options for pad calculation. Merlin can evaluate the current purchasing situation and determine additional quantities of each UIC required at any time. Requisitions can be built automatically.

Material Visibility

Merlin tracks UIC quantities at summary level (on order, on requisition) and at detail levels (e.g. Ready for inspection, released, in transit, delivered). This information is kept up to date automatically with no user intervention.

Projects

Merlin is designed predominately for project-based operations. A Merlin project would normally correspond to a contractor's project, although other arrangements are also available. A Merlin project establishes a set of standards, naming and numbering schemes and a framework for requisition planning and approvals.

Purchasing, expediting and the engineering aspects of inspection are always project-based functions. Most functions of materials management, shipping, receiving and administration operate across projects.

Reference Data

Although project-based, Merlin also maintains information common to all projects, such as the contractor's standard terms, staff names, sites and operating locations. This reference data is available to all projects. Data that is setup specifically for one project can be copied to another for convenience. Similarly, Merlin provides template requisitions and other data.

Vendors & Equipment

Merlin includes integrated Vendor and Equipment catalogues to simplify vendor selection and to monitor vendor performance.

Vendor information includes contact details, agency arrangements and works' locations.

The equipment catalogue is organised in a two level structure representing general and specific equipment types. Both may be linked to their supplying vendors.

Requisition Management

Merlin supports procurement planning and management through;

- The early definition of outline requisitions from templates for different classifications
- A maintained procurement plan for each requisition
- Managed stages in the life of requisitions, with audit trail and approval processes

Supporting Features

Reports

Merlin contains standard reports in the categories of clients, commercial, expediting, inspection, PO variations and planning. Merlin also prints inspection, movements, shipping and receiving documentation. Requisitions, material lists, purchase orders are all adaptable to customer's specific requirements.

Organisation Structures

Merlin includes user-defined organisation structures for the classification of important data into hierarchies for analysis and reporting. Typical applications include cost control, responsibility assignment and project segmentation.

Notes & Free Text

Unlimited free form text and notes can be attached to key data items under a set of user-defined categories. Typical applications are memoranda, telephone call notes and brought forward lists.

Notification Messages

Merlin includes a messaging system to notify interested parties when key events happen, for example issuing a purchase order.

Security

Merlin implements a flexible and rigorous security scheme. Merlin's functional security restricts access to functional areas such as purchasing, expediting and shipping. Merlin also includes an approvals security mechanism so that the organisation can define its own project-based approval mechanisms. Approvals are typically used in purchase order related activities.

Security administration is simplified through security profiles assigned to groups of users.

Project Organiser

Merlin's Project Organiser simplifies the setting up of projects. Reference data can be copied from a corporate set of data or between individual projects.

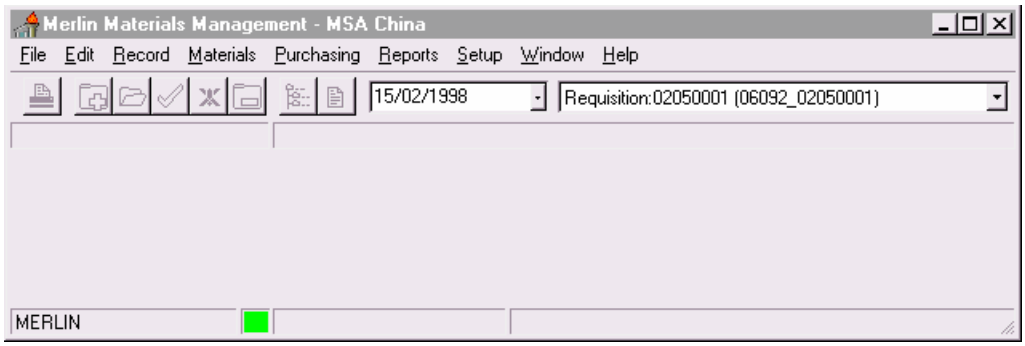
2 User Interface

Introduction

Merlin conforms to Microsoft user interface standards and best practice in user interface design. It has the same look and feel as other Windows 95 and Windows NT programs.

Main Form

Merlin is controlled using the menus, buttons and other controls on the Main Form



The menu on the top provides access to Merlin's main functions. Menus operate in the context of the user's security and the task in progress. Clicking a menu item shows a detailed menu providing access to specific functions.

The functions of the frequently used menu items are replicated on the buttons underneath.

The date next to the buttons is the Effective Date recorded against important updates. Some functions, such as purchase order approval, offer the opportunity to change the date before carrying out the function.

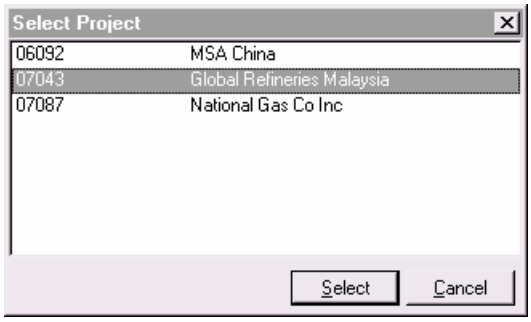
At the right is the Recently Used List. This keeps track of the last 16 records updated. Selecting an entry in the list goes straight to that record for further updating or viewing.

The bar under the buttons shows the current record being viewed or updated. The type of record is shown at the left, for example Vendor, and the code and description of the data to the right, e.g. IS8799_ISIT Limited.

The Status Bar is at the bottom and shows database activity.

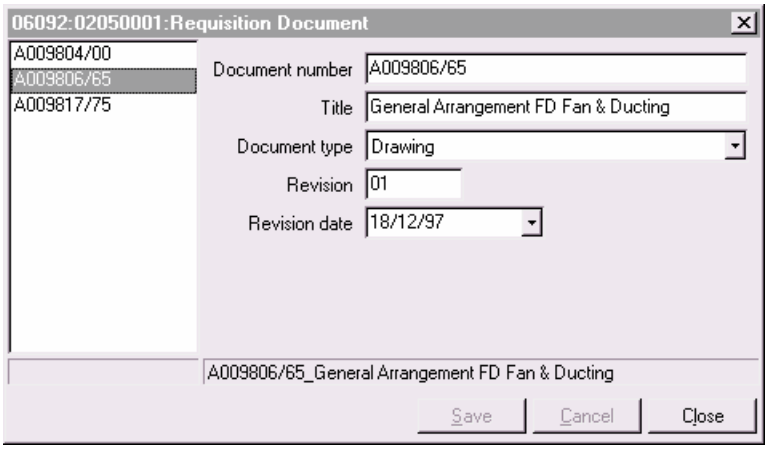
Selection Forms

Selection forms are used to select one item from a list, for example in opening a project



Updating Forms

Updating forms are used to create and update data and to execute functions related to the data. All updating forms have the same general layout and operation.

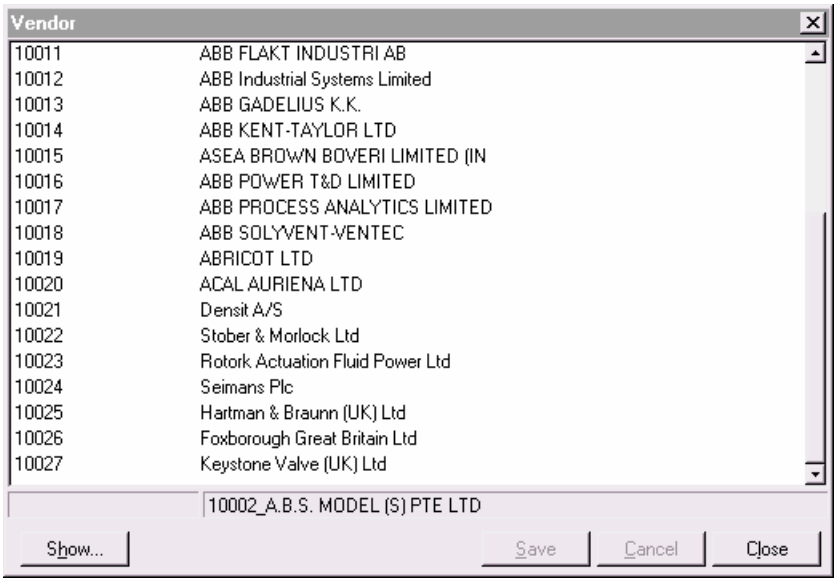


The form's caption shows the data being viewed or edited.

Updating forms provide the following functions from buttons on the form, the main menu or by using the right mouse button:

Create a new record
Open (edit) the record currently selected
Save the record being edited
Delete the record being edited
Cancel changes made without saving

The selection list can be expanded to show more information. When a record is subsequently created or edited, the list temporarily returns to its original size to allow viewing and entry of data.



Normally all available records are shown in the selection list. A search facility allows just the required ones to be shown.

Searching looks for data values based on any of the following:

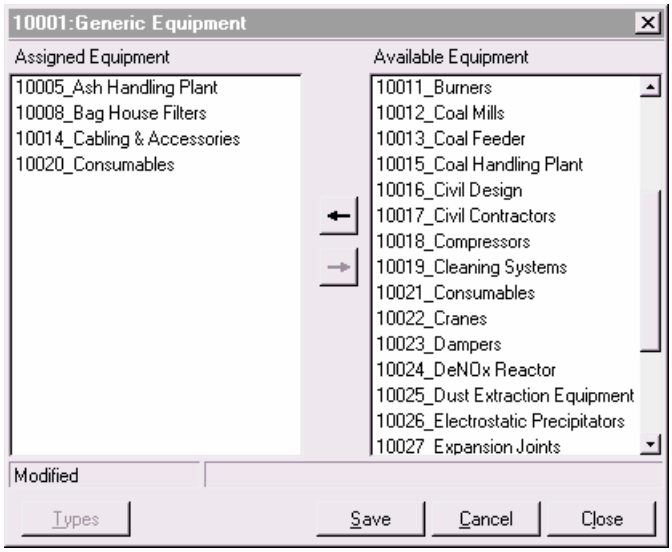
Exact matches
Containing text
Containing whole words
Matching a pattern
Containing words that sound like a word in English

Linking Forms

Linking forms are used to create and maintain links between two types of data, or to select a number of items for processing together.

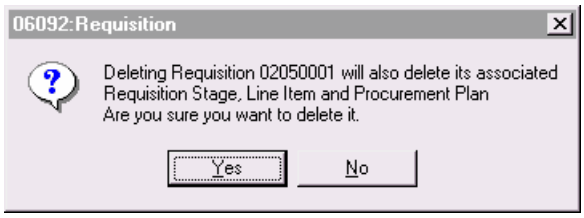
Examples are assigning users to projects and linking vendors with the equipment they supply.

These forms have two lists. Items can be selected from one list them moved to the other by dragging with the mouse or using the buttons. One or more items can be moved at once.



Notices

Merlin validates all data and provides helpful messages when errors are found. Merlin also provides a prompt to confirm important actions such as deleting data.



Project Selector

The Project Selector is a floating selection list that enables instant switching from one project to another. The Project Selector becomes visible when using the multi-project functions of:

Materials Management
Inspection
Receiving

Shipping

3 General Services

Access to Merlin

Acces to Merlin is controlled by user identifiers and passwords. The user identifier defines the functions that a user can perform, and the projects available.

Effective Date

Merlin uses the effective date in number of operations. Some operations allow overriding the date just for that operation. The effective date is applied as follows:

Function	Effective date updates
Create requisition	Requisition created date Requisition stage created date
Issue Engineering Requisition	Engineering req. date
Issue Enquiry Requisition	Enquiry date
Issue Provisional PO	Provisional order date
Issue PO Requisition	PO requisition date
Issue PO	PO issued date
Approve Requisition Stage	Stage approved date
Approve PO	PO approved date
Revise PO	PO revision date
Print Report	Shown in footer of report Used in report calculations
View Material Visibility	Calculation of quantity ready for inspection
Create POV	Created date
Approve POV	Approval date

Numbering Schemes

Merlin includes a range of user-defined numbering schemes for reference data and for project documentation. Numbering schemes are used for Vendors, Requisitions, Line Items, GRNs and so on.

General Numbering

General numbering applies to all numbered data except requisitions which use a separate scheme.

A numbering scheme comprises a method and a format. The method specifies how numbers are generated and the format specifies how the numbers are displayed.

There are 5 methods as follows:

Scheme	Description
Manual	User enters number for new records that cannot be changed manually
Manual Edit	User enters number for new records that can be changed manually
Automatic	Merlin creates a sequential number for new records that cannot be changed manually
Automatic Edit	Merlin creates a sequential number for new records that can be changed manually
Renumber	Merlin creates a sequential number for new records and renumbers records in the list as necessary to keep a continuous sequence

The format is specified as a pattern in the form:

<prefix><digits>

where:

<prefix> is a number of letters or a number of / characters and is optional
<digits> is one or more digits and is mandatory

If <prefix> contains letters then they are prefixed to the number generated. If <prefix> is a number of / characters then Merlin determines the prefix from the first n characters of title of the associated data, where n is the number of / characters entered.

The <digits> are a sequence of any digits (0 to 9). The number of digits specifies the length of the numeric part of the number to be displayed.

Examples:

If the format is RX9999 is used for Purchase Orders then the first PO number generated is RX0001, the second RX0002 and so on.

If the format //99999 is being used for Vendor numbering then the vendor number for the first vendor, Maximus Industries Pty Limited, would be MA00001 and for the next vendor, ISIT Limited, it would be IS00002.

Each data item that can be numbered uses one of these methods and a user-defined format. Some numbered data are defined as reference data and others defined within projects. The numbering schemes defined as reference data apply to all projects whereas those within a project are defined individually for each project. The Renumber method is available only for those numbers where it makes sense.

The use of numbering schemes is as follows:

Scheme Name	Defined as	Applications	Renumber
Documentation	Reference	Packing list numbers	No
Items	Reference	Inspection Visit numbers	Yes
Inspection Agencies	Reference	Inspection Agency numbers	No
Equipment	Reference	Generic Equipment Equipment Types	No
Vendors	Reference	Vendor numbers	No
Shipment	Reference	Shipment numbers	No
Purchase Order	Reference	Organisation-wide PO numbering	No
Purchase Order	Project	Project specific PO numbering	No
Line Item	Project	Requisition Line Items Vendor Data Schedule Items	Yes (1)
Documentation	Project	Goods Received Note Material Movement Ticket Inspection Failure Note Inspection Release Note Purchase Order Variation Vendor Concession Report	No
Documentation Items	Project	Expediting Item Forecast Expediting Note Goods Received Note Item	Yes

Note 1:

This is also determined by Line item numbering in Requisition Stage.

Requisition Numbering

The requisition numbering is defined for each project. Requisition numbers have an optional prefix that is prefixed to each requisition number. The rest of the number is formed in four parts:

Requisition Type
Requisition Sequence
Requisition Split Code
PO Revision code

If generic requisition numbering is used Requisition Sequence is generated automatically by Merlin. Requisitions are allocated sequential Requisition Sequence numbers within each Requisition Type for the project as required. If generic requisitions are not used no requisition type is specified.

These parts can be alpha-numeric or numeric in any combination and can appear in any order in the requisition number. Each part may be of fixed or variable length with optional delimiter characters between parts.

The total length of the requisition number, including any prefix and separators, cannot exceed 16 characters.

Messages

Merlin includes a simple messaging system that notifies relevant users of the progress of requisitions. Each requisition has users assigned fulfilling the following roles:

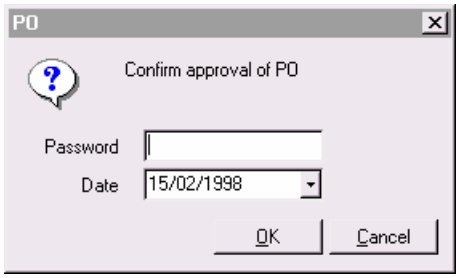
Buyer
Engineer
Expediter
QA Inspector
Shipping clerk

When a Requisition Stage starts any number of the users in those roles can be notified automatically.

Messages can also be sent by E-mail, described below.

Confirmations

Certain actions ask the user for confirmation to proceed. Some confirmations require a date, a PO number or the user's password, depending on the circumstances. The action will only be carried out if the required data is entered correctly.



Confirmations are used for the following functions:

Approve PO
Cancel PO variation
Cancel PO variation
Approve requisition stage
Approve PO
Cancel PO
Create PO number
Complete requisition
Revise PO
Issue original, draft or copy PO

Sending E-Mail

E-mail can be sent directly from Merlin using the SMTP protocol.

When E-mail is requested, Merlin initialises the data according to the context in which the E-mail was requested.

Merlin completes:

The sender as the user identifier
The subject based on the currently active form
The recipient as the vendor's E-mail address if the a Vendor or Vendor Contact is on the active form

These can all be changed before sending the mail.

The E-mail address from any User in Merlin can also be selected from a list.

Locking Merlin

Merlin can be locked so that its forms are minimised to an icon on the Windows taskbar and Merlin cannot be accessed on that PC. Merlin can then safely be left unattended.

Merlin will prompt for the password of the user that locked Merlin before continuing.

Macro Facility

Merlin has a macro facility that enables data values to be incorporated into E-mail messages and queries. This enables, for example, a complete E-mail to be generated and sent based on data held in the database.

Organisation Structures

Organisation Structures provide a user-defined hierarchical classification system for important data. Such data can be attached to structures for analysis and reporting. Merlin supports an unlimited number of structures and an item of data can be placed within any number of structures.

Free Text

Free Text enables the attachment of notes or other textual information to important data. Merlin supports an unlimited amount of free text and each item of data can have any amount of free text.

Context Print

When any record is displayed for viewing, a Context Print provides a simple listing of the data being viewed.

General Query

A library facility provides cataloguing and quick execution of frequently used general purpose queries. These queries are previously defined using a Systems Administration function.

The results of a query may be viewed or exported to the Microsoft Word or Excel products.

Data Sizes

Merlin's data types and sizes are as follows:

Data Type	Size
Project codes	16
Requisition numbers	16
PO numbers	16
Other numbered items and numbered documents (Line Item, POV, MMT, GRN etc.)	8
Other codes	8 – 24
Titles	32 – 96
Text, memos, addresses, long descriptions etc.	Unlimited
RTF formatted text	Unlimited
Names	24
Currency	4 decimal places
Quantities	4 decimal places
Man-hours	2 decimal places
Percentages	2 decimal places
Externally generated codes (GL vendor numbers, invoice numbers, vendor document numbers etc.)	16

4 Reference Data

Introduction

Merlin maintains a set of reference data that can be used in all projects. Some reference data can be copied to individual projects to create project-specific reference data.

Addresses

Addresses store the locations and contact details of all locations relevant to projects.

Addresses are used for bid and invoice return addresses, and office, site and delivery locations.

Carriage Terms

Carriage Terms describe the conditions under which a purchased unit is to be carried and delivered. Examples: Delivered FOB, Delivered Factory Stores.

Certification Authorities

Certification Authorities are organisations that certify the acceptability of equipment and materials to ensure maintenance of operating and safety standards. Lloyds is an example of a certification authority for the United Kingdom.

Clients

Clients are those organisation that equipment or materials are being purchased for, as engineering project or as procurement service.

Countries

Countries denote national jurisdictions in which bids are made and purchase orders placed.

Currencies

Currencies represent the monetary units in which purchasing transactions take place.

Merlin makes no inherent relationships between currencies and countries. Exchange rates are held individually for each project.

Equipment Hazard Types

Some equipment or materials can be a potential safety and health hazard. Equipment and materials can be graded in terms of hazard level. Examples: Inert, Poisonous, Explosive.

Free Text

Free Text provides a user-defined classification system for attaching notes or other text to important data. Merlin supports an unlimited amount of free text and items

of data can each have any amount of free text.

For ease of use, free text is classified into text types. Each text type identifies the kind of free text. Examples are: reminder notes, telephone call notes, “to-do” lists and notes for others.

Free text can be attached to these data:

BOM Group
Equipment
Line Item
Purchase Order Variation
Project
Requisition
Vendor

Inspection Agencies

Inspection Agencies are engaged to certify that equipment or material meets the agreed specification.

Note that an Inspection Agency is not a Certification Authority.

The organisation’s own inspectors can be treated as an inspection agency.

GL Area Codes

GL Area Codes refer to the organisation’s accounting structure.

GL Area Codes allow a single vendor code to be utilised within a multi-location accounting system for vendor payments.

Named Events

Named Events provide an organisation-wide categorisation of similar events in procurement plans of individual projects.

Named events allow procurement planning activity to be reported across projects. In each project, any Requisition Events can be associated with a particular named event.

Payment Terms

Payment Terms are the agreed terms of payment between the buying and selling companies. Examples: 21 Days Net, On Delivery.

POV Reasons

Purchase Order Variation Reasons maintain control over purchase order variations (POV). A POV reason describes the reason for a requested change. Examples: Specification Change, Commercial Change.

POV Reasons enable analysis of reasons for change (and there consequent costs) at project completion or to establish a trend as the project is running.

Project Phases

Project Phases document the criticality of requisitions to stages in a project. Examples: Conceptual Design, Detail Design, Fabrication, Erection.

QA Surveillance Grades

QA Surveillance Grades determines the level of inspection that will be required by the buying organisation for a Purchase Order.

QA Surveillance Grades can supply a default setting for inspection requirements of requisitions.

Quality Certifications

Quality Certifications identify types of certificates of competence that can be held by vendors nationally and internationally. Examples: ISO 9000, BS1571.

Requisition Document Types

Requisition Document Types are a general classification of documents related to requisitions. Examples: Drawing, Specification, Data Sheet.

Requisitions have an index of documents that are issued with an enquiry or purchase order. Each document index entry will have a document type. This facility allows the index of documents assigned to a requisitions to be sectioned by document type.

Requisition Sites

Requisition Sites define the organisation's office locations at which staff are resident and procurement activity takes place. Requisition sites support procurement on the same project at different locations.

Requisition sites are not the same as Site/Delivery Locations although both may share the same address.

Requisition Types

Requisition Types (also called Generic Requisitions) provide an organisation-wide classification of requisitions and may be used as part of requisition numbers. Use of Requisition types enables consistency in requisition numbering and descriptions across all projects.

The use of requisition types is optional and may be different for different projects.

Use of requisition types simplifies automatic requisition building from Bills of Materials.

The information on a requisition type is used as a default on requisitions created from that type providing a requisition template.

Shipping Terms

Shipping Terms are the terms of payment to transportation or shipping organisations.

Transport Methods

Transport Methods describe methods of carriage. Examples: Rail, Road, Air Cargo.

Organisation Structures

Organisation Structures provide a user-defined hierarchical classification system for important data. Such data can be attached to structures for analysis and reporting. Merlin supports an unlimited number of structures and an item of data can be attached to any number of structures.

Structures can be applied to topics such as cost allocation, planning, reporting and work breakdown schemes.

Each Structure comprises a number of Structure Elements in a single hierarchy. Each structure element is a place in the structure's hierarchy and has one other structure element as its parent.

Data in these categories can be attached to structure elements:

BOM Group
Equipment Type
Generic Equipment
Line Item
Purchase Order Variation
Project
Requisition
Vendor

Units of Measure

Units of Measure describe how quantities are to be interpreted. Examples are: Kilos, Boxes, Lots. Each unit of measure has a dimension which may be:

Units
Length
Area
Volume
Weight

Vendor Ratings

A Vendor Rating indicates the trading or commercial status of a vendor. Examples: Do not use, Unknown, Orders only to £10,000.

Note that the vendor rating does not necessarily illustrate the actual performance of the vendor.

5 Projects

Introduction

Merlin is designed predominately for project-based operations. A Merlin project would normally correspond to a contractor's project. Small projects and local purchases can be combined into a single Merlin project.

Most activities are project based, including purchasing, expediting and the engineering aspects of inspection. Materials management, shipping, receiving may operate within a project or across a number of projects.

Projects

A Merlin project defines a set of standards, naming conventions, numbering schemes, common data and a framework for requisition planning and approvals.

BOM Group

Bills of Materials (BOMs) are organised into BOM groups. A BOM group represents the collection of material required by an engineering discipline on a project.

The actual material requirement for a BOM Group is a QTO Requirement, described later. If all disciplines are to be treated together, then only one BOM group is required.

Goods Receivers

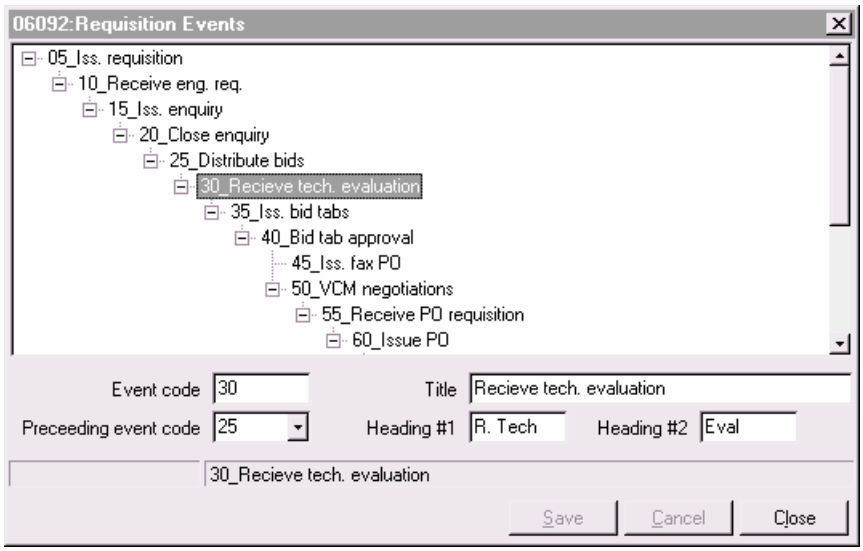
A Goods Receiver is a vendor that may receive materials and equipment at an intermediate point or at final site location. Many goods receivers are freight forwarding companies.

Named Events

A Project's Named Events link requisition events in the planning network to the organisation-wide named events defined as reference data. Each requisition event may optionally be identified with a named event for consolidated or standard reporting.

Networks

Merlin uses networks as the basis for procurement planning. A project contains a set of requisition events. Each event is a milestone in the progress of a requisition from instigation to completion. Requisition events are organised into a precedence-like planning network. Each Requisition event (other than the first) has exactly one preceding requisition event. The resultant network topology applies to all requisitions in the project.



Networks are created to define a set of durations for the requisition events in the network topology. Networks therefore differ from each other only in the durations of the requisition events. Examples of networks might be: 6 week competitive bid, 3 week call-off, 10 week delivery.

Each requisition event within a network may have a number Resource Distribution. A resource distribution spreads a resource requirement (e.g. man-hours) across a number of Resource Names (e.g. disciplines or departments).

Each Requisition is assigned a network that creates the requisition's procurement plan, described later.

Persons

A Person is someone allowed to use Merlin on a specific project. System Names contains details of all people whereas a person represents the assignment of a system name to a Project. Merlin allows persons to be assigned various roles on the project and individual requisitions such as Buyer, Expediter, Shipping Clerk. These roles are related to Merlin's security scheme.

Persons are organised into a hierarchy. Each person has a manager, who is another person assigned to the project.

Project Exchange Rates

A Project Exchange Rate is the conversion rate between a currency and the project's base currency. Exchange rates are expressed as the amount of currency equivalent to one unit of project currency.

Currencies can be freely mixed between requisitions, but only one set of exchange rates is available for a project. That is, the rates are constant throughout the project to facilitate cost control.

Requisition Stages

Requisition Stages form the basis of organising and managing the process of taking a requisition from an engineering requirement to order placement or beyond.

A project has a set of requisition stages common to all requisitions. Each stage corresponds with a segment of the procurement process. Requisition stages are defined for each project to match the business process being used. Typical requisition stages include Enquiry, Bid Evaluation and Order Placement.

There is an important distinction between requisition stage and requisition events. Requisition stages are concerned with the process and approvals at key points. Requisition events and their procurement plans are concerned with planning to meet a timetable. Typically a requisition stage covers the timeframe of a number of requisition events.

Resource Names

Resource Names identify resources (skills, departments, disciplines etc.) used for the organisation's resource management and cost control. Resource Names represent resources required by procurement activities.

Site/Delivery Locations

Site/Delivery Locations define places where material and equipment is received. They may be intermediate or final destinations.

Site/Delivery locations are not the same as requisition sites although both may share the same address.

Standard Text

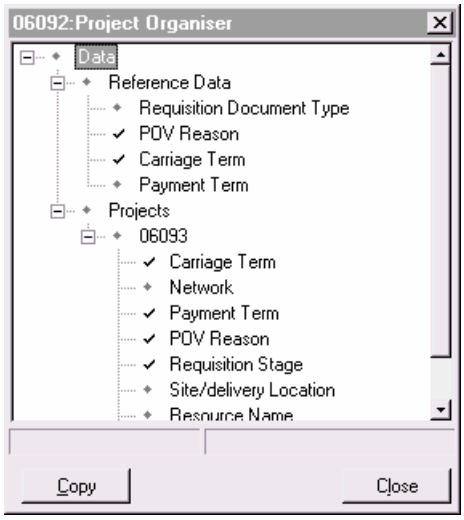
A library of Standard Text can be created for inclusion in documents. Standard text is typically used for terms and conditions of sale and other contractual documentation.

Standard text is not used on its own, but can be pasted to the following:

Inspection Failure	Reasons for failure, Action required
Line Item	Commercial text
Requisition	Enquiry terms, PO specific terms
Vendor Concession	Concession action, Concession description

Project Organiser

The Project Organiser copies reference data to a project or project data between projects.



The following reference data can be copied to a project:

Carriage Terms
Payment Terms
POV Reasons
Requisition Document Types

The following project data can be copied from one project to another:

Carriage Terms
Networks
Payment Terms
POV Reasons
Requisition Stages
Resource Names
Standard Text
Site/Delivery Locations

6 Equipment & Vendors

Merlin's equipment catalogue is organised in a two level structure representing general and specific equipment types. Each general equipment type contains a number of specific types. Both may be associated with those vendors manufacturing that equipment.

Merlin maintains detailed records of Vendors. Each vendor has associated:

Agents for other vendors
Equipment supplied
Certifications
Contacts
Payment Areas

Generic Equipment

Generic Equipment describes a broad kind of equipment. Examples: Fans, Vessels, Telemetry.

Each Generic equipment may be sub-divided into a number of Equipment Types.

Equipment Types are the sub categories of generic equipment. For example the generic equipment Fans could contain Backward Facing Centrifugal, Forward Facing Centrifugal and Axial Fans.

Vendors Description

Vendors are businesses that supply equipment, materials and services to the organisation.

When a vendor is created Merlin sets requisition site to the creating users' originating site code to simplify subsequent payments and accounting.

Vendor's may be associated with both generic equipment and equipment types

Payment Area

Payment Areas link Vendors to the organisation's accounting system. A payment area gives the general ledger vendor number to be used for accounting transactions within a particular company area.

Vendors' Equipment

Vendors' Equipment is the equipment manufactured or supplied by a particular vendor.

Vendor Agents

A Vendor Agent is a vendor that acts as an agent for another vendor.

A vendor may be a manufacturing vendor in its own right as well as an agent for any other number of vendors (except itself).

Vendor Certifications

A Vendor Certification describes a quality management (or other certification) held by a Vendor).

Vendor Contacts

A vendor contact is identification and communication details of a person in the vendor's organisation.

7 Requisitions

Requisitions form the basis of purchasing and specifiy an engineering requirement. The requirement may be for an arbitrary set of materials or equipment or both. Requisitions contain line items each specifying the quantity of a particular item of equipment, material or supplementary items such as documentation. Requisitions lead ultimately to the placement of one or more purchase orders.

Merlin offers flexibility in that it does not require the use of any particular business process. The content and structure of requisitions may be linked to the way in which the engineering requirements are generated, or to the purchasing process. Requisitions may be pre-planned and their progress tracked through key milestones. Requisitions may be organised on the basis of generic requirement types to simplify their specification.

Requisitions pass through a number of project-defined stages, typically including:

Engineering Requirement
Enquiry
Bid Evaluation
Provisional Order
Order Placement
Tracking to Delivery

See Requisition Stages, earlier. Completion of stages may be linked to the procurement plan and an approval process.

Prior to order placement requisitions may be sub-divided (or split) into a number of separate requisitions to place orders with different vendors, or to phase the requirement over time. Similarly, different requisitions may be merged into one to place a single order from a number of requirements. Requisitions may be split or merged at any time up to the point of order placement, for example after bids have been evaluated.

Each requisition has associated:

Line items
Requisition Documents
Potential Vendors
Vendor Data Schedule
Procurement Plan
Audit trail and history

Requisitions

When a new requisition is created the project creates the following default values:

Billable
Carriage terms
Certification authority
Project currency
Inspection required ?
Site location
Packing required ?
Transport method
Vendor data required ?
QA engineer

For a new requisition the first requisition stage is started. See Requisition Stages earlier.

Requisition titles, numbering, inspection and QA requirements and other data can be set to default values.

Merlin creates a procurement plan and keeps it updated as the requisition progresses. Merlin calculates a requisition float as the number of days between the forecast date of a specific event in the project (or planned date if there is no forecast date) and the required by date.

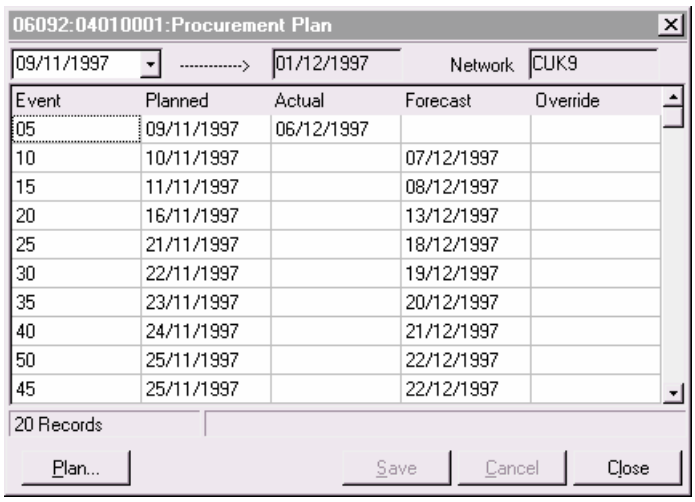
Discounts by value of percentage of order are available. Merlin calculates both the actual discount value and percentage using the one entered against the total value of line items. Discount percentages and values are recalculated when the value of any line item changes.

Merlin also maintains the requisition's first and last ex-works dates, and material and other cost totals from its line items.

Procurement Plan

A requisition's Procurement Plan describes the anticipated and actual progress of a requisition from inception to completion.

The procurement plan is created automatically from the requisition's network. The network gives the durations to each node in the plan.



Procurement plans are updated by Merlin and by user input to actual or forecast dates. Normal network time analysis rules apply to the updating of procurement plans.

When a procurement plan is first created its planned dates are calculated by:

A backward pass, setting all end events to the requisition's required by date
A forward pass starting at start date just calculated

When an actual date is entered or changed Merlin conducts a forward pass to calculate forecast dates. The forecast date for each event uses its predecessor's actual date if present, or its forecast date otherwise. Planned dates are not changed.

When an override date is entered or changed Merlin conducts a forward pass to calculate succeeding events' override dates where not already entered. The override date for each event uses its predecessor's override date if present or its forecast date otherwise. The procurement plan is also updated as relevant requisition stages are approved.

Requisition Documents

The Requisition Documents form an index of documents that are included with the requisition when it is issued to vendors for enquiry.

Requisition Vendors

Requisition Vendors are those vendors to whom an enquiry is sent. Requisition vendors do not need to be known and in the vendor catalogue.

When an order is to be placed with a new vendor, that vendor needs to be added to the vendor catalogue first.

Vendor Data Schedule

When an enquiry is issued, information will usually be required with the bid returned by the vendor. The Vendor Data Schedule specifies in lists what is required from the vendor with the bid, and if the vendor were to be successful what will be required when an order is subsequently placed.

Line Items

A requisition's material list is described by Line Items. Each line item specifies a required quantity of a material type or item of equipment.

Line items may have a Unique Identifier Code (UIC) or a Tag Number.

UICs uniquely define a type of material, whereas tag numbers uniquely identify a specific item. UICs are used to manage requirements across requisitions and projects. Tag numbers are unique within a project and identify major pieces of equipment.

Line items can be created to specify requirements additional to the material or equipment, for example technical documentation and installation manuals. These are known as commercial items.

Each Line Item has associated:

Accounting Distributions
Forecast Release
Parts (where a line item is divided into separately identifiable components)

When a new record is created the following default values are copied from the associated requisition:

Billable
Certification required
Inspection visits required
Special handling
Vendor data required
Unit of measure

When a line item is created, or an existing line item's UIC or quantity is changed, the material visibility for the UICs is automatically updated. If a line item is deleted the material visibility for its UICs is similarly updated.

Where a UIC system is employed, Item description is updated with the UIC's description when the UIC is set or changed.

When the line value changes the line item's accounting distributions will be updated if they are valid. In this case the amount of value on each accounting distribution is recalculated from the distribution's percentage of value. If the accounting distributions are not valid, no updating takes place.

Line Item Parts

A Line Item Part is a division of a line item where the line item may be shipped and delivered in parts.

Accounting Distributions

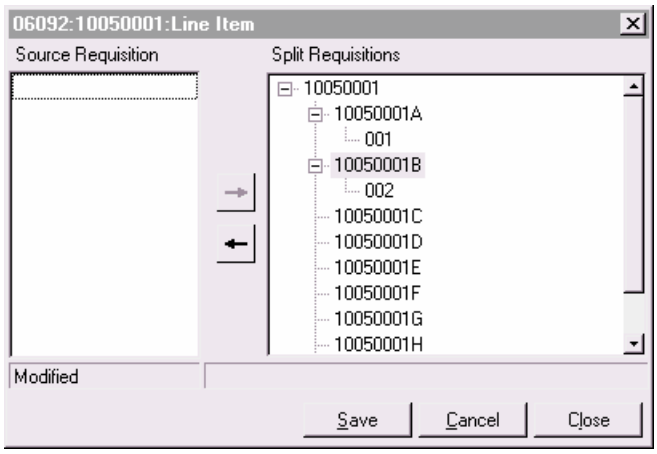
Accounting Distributions are used to spread the cost of a line item across a number of account codes for accounting and cost control. An accounting distribution allocates either an amount of a proportion of the item's value to a single account code.

Requisition Functions

Splitting Requisitions

A requisition can be split into two or more target requisitions providing that a PO number has not been created

Merlin creates a range of target requisition numbers according to the requisition numbering in use on the project. Each line item is assigned to one of the new requisition numbers. The requisition cannot be split until all its line items have been assigned.



Merlin copies the following data from the requisition to each of the target requisitions:

Requisition (with new requisition number)
Selected Line Items (renumbered)
Expediting Description
Procurement Plan
Requisition Stage
Requisition Documents
Vendor Data Schedule

Line items in the target requisition are numbered automatically using the numbering scheme and format of the project (possibly overridden by the numbering scheme in the requisition stage).

Merlin then recalculates the following for each target requisition:

Material cost
Other costs
First ex-works date
Last ex-works date
Discount percentage
Discount value

Merging Requisitions

Any number of source requisitions can be merged into an existing target requisition providing that a PO number has not been created.

Merlin creates the list of source requisitions from all those without a PO number. Any number can be selected for merging.

When the selected source requisitions are merged all line items from each one are merged into the target requisition.

Merlin copies the line items (renumbered) and requisition documents from each source requisition to the target requisition.

Merlin then recalculates total costs, ex-works dates and discounts for the target requisition.

Requisition Stage Approval

A requisition stage can be approved by a user having the authority set by the requisition stage.

When a requisition stage is approved, Merlin:

Records the stage approval date in the requisition stage for the requisition
Creates a copy of all line items as line item history
Marks the requisition as in the next stage
Updates the procurement plan (optionally)
Creates the Expediting Description and/or Inspection Requisition/POs as defined by the next requisition stage

The procurement plan is updated if the stage being approved contains an approval event. In that case the actual date of that event is set to the stage approval date and forecast dates are re-calculated for the procurement plan.

Completing Requisitions

A requisition may be marked as complete when its PO has been finalised. When complete, the requisition does not appear in any list for selection.

Purchase Order Functions

PO State

Each requisition has a PO State that describes the status of a requisition's associated purchase order. PO States and their meaning are as follows:

None	The requisition has no associated PO
Unapproved	PO has been created but is not yet approved
Approved	PO is approved and ready for issue
Cancelled	PO has been cancelled
Vendor Rejected	PO has been issued but not accepted by the vendor
Issued	PO has been issued to the vendor
In Revision	PO is being revised by constructing a PO revision
Revised	PO has been revised and superseded

Checking PO Completion

Merlin will check that a PO is complete before approval. A user can also check completion at any time.

Merlin identifies both errors and warnings. A PO cannot be approved if there are errors but can be approved if there are only warnings. If Check PO Completion is set in the project, Merlin asks for confirmation before approving POs that contain warnings.

Any of the following conditions constitute an error:

There are no line items
A line item has no quantity or price
Any line item has certification required set but the requisition has no certification authority
Missing bid return address
Missing invoice return address
Missing carriage terms
Missing contract final inspection (where Inspection required set)
Missing contract FOB
Missing currency
Missing site location
Missing first ex-works date
Missing last ex-works date
Missing country of manufacture
Missing payment terms
Missing buyer
Missing vendor
Missing transport method

Any of the following conditions constitute a warning:

Missing other costs
Missing equipment hazard rating
Missing document number
Missing PO Specific terms
Missing port of exit
Missing QA Engineer
Missing expediter
Missing shipping clerk
Vendor data required not set

Creating a PO

Creating a PO from a requisition has three stages:

Creating a PO number
Approving the PO
Issuing the PO

A PO number may be created if there is no existing PO number. The PO number is created using the corporate or project numbering format and scheme as defined for the project. Merlin prompts for a PO number if one is not automatically created.

A PO can be approved subject to the user's authority and details being complete. This step can be combined with creating a PO number.

A PO can be issued in three forms:

Draft
Final
Copy

Only one of these forms is available at any time depending on the state of the PO.

When a Final PO is issued Merlin updates:

PO State to Issued
PO Issued date for the requisition
PO Revision issued date for the requisition

Cancelling a PO

A PO may be cancelled before or after approval or issue.

If the PO had not been issued this is just equivalent to removing the PO number;
if the PO was approved but not issued this is equivalent to unapproving the PO;
if the PO was issued then an actual order has been cancelled.

Vendor Rejection of PO

A requisition may be marked as vendor rejected after a PO has been issued. The PO is then marked so that the requisition can be updated The PO can then be re-approved and issued.

Purchase Order Changes

There are four steps to changing a PO after issue:

Defining the changes required (creating PO Variations)
Approving (or cancelling) PO Variations
Building a PO revision
Revising the PO

Building a PO Revision is the process of deciding which PO variations to include in the revision. Those that are not included can be incorporated in a subsequent revision or cancelled.

PO Variation State

Each POV has a POV State that describes the status of the POV. POV states and their meaning are as follows:

Unapproved	POV has been created but is not yet approved
Approved	POV is approved and ready for assignment
Assigned	POV has been assigned to a PO revision
Incorporated	POV has incorporated in a revised PO
Cancelled	POV has been cancelled

PO Variations

A Purchase Order Variation (POV) describes an intent to change a purchase order. It is separate from the process of actually revising the PO. POVs provide an audit trail of proposed and actual revisions to POs.

PO variations may be created at any time providing there a PO exists and has not been cancelled.

Creating POVs has no effect on the underlying PO or requisition until:

The POVs are approved
The POVs are assigned to a PO Revision
The PO is revised through creating a PO Revision

If a POV is no longer required it can be cancelled at any time.

Before a POV can be used in a PO revision it must be approved. When a POV is approved Merlin sets POV State to approved and sets the approved date.

PO Revisions

A PO Revision can be created at any time after a PO has been issued. Each requisition can only have one PO revision at a time.

Merlin creates a list of possible POVs for inclusion. These are the POVs with a POV State of approved. The POVs required are then selected. Merlin sets their POV state to assigned and updates the requisition's PO State to in revision.

Merlin keeps a copy of the following data prior to revision:

Requisition
Line Items
PO Variations
Requisition Documents
Vendor Data Schedule

All POVs remain visible when viewing the original and revised POs.

8 Inspection

Inspection Management

Inspection Requisition/PO

Inspection Requisition/POs contain the basic inspection data for a requisition.

Inspection agency is initialised from that on the requisition when the inspection requisition/PO is created. The record is automatically created at the start of the relevant requisition stage.

Each inspection requisition/PO may have a number of inspection visits.

Inspection Visit

Inspection Visits record administrative information about an inspection visit in connection with a single requisition.

Note that the engineering aspects of inspection (material release and failure) are defined separately as described below.

Inspection Failure Note

Failure Note

An Inspection Failure Note (IFN) is created to document a vendor's items that have failed inspection

Each IFN contains one or more Inspection failure items describing the specific failed items and quantities.

Failure Item

A Failure Item identifies the quantities of an item that failed an inspection.

Each failure item is independent of all others within the same or different IFNs. There is no validation of the total quantity failed of a specific line item because some items may fail inspection more than once.

Failure items can be created for requisitions that do not need inspection. Merlin accepts these failure items and shows an information message.

Inspection Release Note

Release Note

An Inspection Release Note (IRN) authorises the release from a vendor of a number of items that required inspection.

Each IRN contains a number of release items describing the specific items and quantities released.

Release Item

A Release Item identifies the quantity of an item that passed inspection.

If the requisition code or line item is changed on an existing release item the material visibility for the affected UICs is automatically updated.

Release items for a given requisition code and line item, on the same or different IFNs, are all taken into account in validating the maximum value of Released quantity. Line items can only be released once.

Release items can be created for requisitions that do not need inspection. Merlin

accepts these release items and shows an information message.

9 Expediting

Expediting

Expediting Description

Expediting Description contains the basic expediting data for a requisition. Expediting descriptions are created automatically at the start of a requisition stage with the start expediting option set.

Requisition Subcontract Vendor

Requisition Subcontract Vendors note key details of sub-contractors that a vendor is employing where the expediting function has some interest in these vendors.

Expediting Item Forecast

The expected timing of the release of line item quantities is given by Expediting Item Forecasts. Each identifies the quantity expected to be ready for inspection at a given date.

Use of expediting item forecast is optional and can be used for requisitions that need inspection or not. Expediting item forecast is used only in determining material visibility. See Material Visibility, later.

Expediting Note

Expediting Notes may be attached to expediting data (a requisition) and to individual line items.

Material Movement Tickets

MMT

A Material Movement Ticket (MMT) is an instruction to move an amount of equipment or material specified in related MMT Items. An MMT may be issued to a vendor or to a shipping agent. Each requisition determines whether MMTs are required.

If vendor is set the MMT authorises movement from the vendor's works. Otherwise it documents a supplementary MMT from an intermediate location. Movements from the vendor's works are tracked for material visibility.

Each MMT contains a number of MMT Items describing the specific items and quantities moved.

If an MMT from the vendor's works is deleted the material visibility for the UICs on its MMT items is automatically updated.

MMT Item

An MMT Item identifies the quantity of a specific line item being moved within an MMT.

For MMT items from the vendor's works the UIC's material visibility is automatically updated when:

The requisition code or line item is changed; or
The MMT item is deleted.

MMT items for a given requisition code and line item, on the same or different MMTs, are all taken into account in validating the maximum value of quantity for movement. Line items can only be moved from the vendor's works by an MMT once.

MMT items can be created for requisitions that do not need MMTs. Merlin accepts

these MMT items and shows an information message.

10 Shipping

Shipments

Shipment Description

A Shipment identifies a cargo to be moved from one place to another by a shipping vendor. Each requisition determines whether shipping is required.

If Vendor's works is given the shipment moves items from the vendor's works. Otherwise it documents an intermediate shipment from one receiver to another. Shipments from vendor's works are tracked for material visibility.

Each shipment contains a number of Packing Lists. Packing lists in turn describe the specific line items and quantities shipped.

Packing Lists

A Packing List documents a group of items to be handled as one, for example being shipped in the same container.

A Packing list comprises a number of Packing List Items

Packing List Items

A Packing List Item is a quantity of a specific line item being shipped in a shipment and documented on a packing list.

For Packing list items from the vendor's works the UIC's material visibility is automatically updated when the requisition code or line item is changed.

Packing list items for a given requisition code and line item, on the same or different shipments, are all taken into account in checking the maximum value of quantity. The line items on requisitions requiring MMTs should be authorised by an MMT before shipping from the vendor's works. Merlin accepts any quantity but shows an information message if greater than the calculated (i.e. theoretical) maximum quantity.

If the unit of measure is different from that of the line item but is dimension-compatible, Merlin shows a warning message.

Packing list item can be created for requisitions that do not require shipping. Merlin accepts these packing list items and shows an information message.

11 Receiving

Goods Received Note

GRN

A Good Received Note (GRN) documents a receiver's receipt of a shipment or other delivery.

Each GRN contains a number of GRN Items describing the specific items and quantities received. For GRNs at the requisition's site location, the material visibility for the UICs on its GRN items is automatically updated when:

Location is changed, or
The GRN is deleted

GRNs record items received at all points in transportation from the first point of receipt after shipping from vendor's works to the final location.

GRN Item

A GRN Item describes the quantity of a specific line item received within a GRN.

For GRN items received at the requisition's site location, the UIC's material visibility is automatically updated when:

The requisition code or line item is changed; or
The GRN item is deleted.

12 Materials Management

QTO Requirement

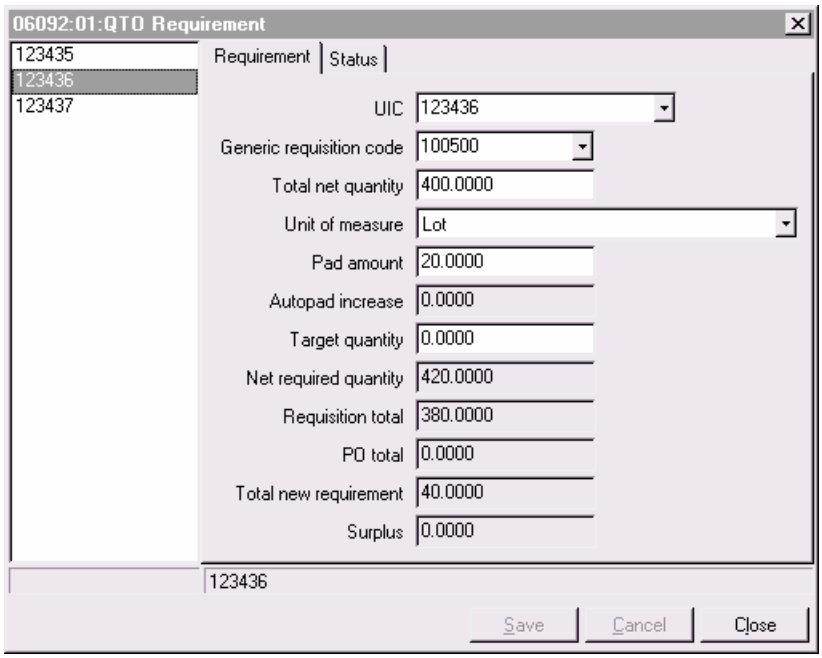
QTO Requirement Description

A Bill of Materials (BOM) is called a QTO Requirement and contains the current required quantities of material classified by UICs for a BOM Group. QTO requirements may be created manually or by importation from engineering systems.

Either a pad amount or a target quantity can be specified. Merlin uses the QTO requirement and quantities on requisition and order to determine either then quantity needing to be requisitioned/ordered or any surplus.

Material Visibility

Each QTO requirement has an associated Material Visibility showing the requirement and whereabouts of UICs already on requisition and on order.



Material visibility counts the quantity of the UIC in each of the following 12 categories:

Prior to PO issue:

Engineering	In an Engineering Requisition Stage
Enquiry	In an Enquiry Requisition Stage
Evaluation	In an Evaluation Requisition Stage
PO Ready	In a PO Requisition Stage
PO Prov	In a Provisional PO Stage
Unknown	Not on a PO, but none of the above

After PO issue:

PO Issued	On issued PO
Ready Inspect	Ready for inspection (where required)
Released	Released (where required)
Moved	Moved on MMT (where required)
Shipped	Shipped from vendor's works
Received	Received on site

Prior to PO Issue these categories are mutually exclusive. A given quantity of a UIC on a requisition will appear in exactly one category. Quantities on requisitions in requisition stages not having any materials management stage set are accumulated under other.

After PO issue the categories are defined as follows:

PO Issued	On issued POs
Ready Inspect	Ready for inspection at a date up to the effective date
Released	Released through IRNs, for those items requiring inspection
Moved	Moved on MMTs from the vendor's works, for those items requiring MMTs
Shipped	Shipped from the requisition's vendor's works for those items requiring shipping
Received	Received on requisition's site location on GRNs

These categories are not mutually exclusive. All UICs on orders will be counted under PO Issued. Quantities are only counted in shipped and received when the items leave the vendor's works and are received on site. Intermediate movements are not tracked, although the information is available from the individual shipments and GRNs.

BOM Import

The BOM import process reads an external data source containing UIC requirements and updates or creates a QTO Requirement. The BOM import is controlled by a BOM Server. Different BOM servers are used for each kind of external data source.

Each BOM import reads net UIC requirements for a single BOM Group.

Parameters provide import information for the BOM server defining how pad is to be handled.

Generating Requisitions

The QTO Requirement within a BOM group can generate line items on suitable existing requisitions automatically. Line items may be generated for some or all UICs having the same generic requisition code within the BOM Group. The process can be repeated for other generic requisition codes as required.

For a selected generic requisition code, Merlin summarises the derivation of the current purchasing requirement as follows:

UIC	The UIC
Gross requirement	Total net quantity
Pad	Autopad or Pad amount
Net requirement	Net required quantity
Required	Total new requirement

An order quantity can be specified for each UIC. This would normally be the same as the total new requirement..

A line item can then be created for each UIC having an order quantity. The Line items can be attached to any requisition that:

Is in a requisition stage having materials management engineering stage set, and
Has a PO state of none or unapproved, and

Has no BOM group or the same BOM group as that in the requirement

Line items are numbered automatically using the project's line item numbering format.

On completion, the QTO Requirement is updated to reflect the transfer from a requirement to a requisition

13 Systems Administration

Users

A User identifies a person allowed to use Merlin.

A user is defined in Merlin solely for the purposes of using Merlin. Each user will also need to be defined in Merlin's database management system in that database required a login.

Security profile is the profile applied when the user has not opened a project. If a user is assigned to a project (as a person) that person's security profile is applied when logged on to that project.

Introduction

Merlin implements security at three levels.

First, all users need to be registered with Merlin to gain access. This user is also registered with the database management system being used.

The second level of security invokes a Security Profile when a user logs on to Merlin. A security profile determines the functions that a user having that security profile is able to perform. Examples are: requisitioning, expediting, receiving and systems administration. Users can have different security profiles for different projects on which they are working, and a further security profile for working outside of a project.

The third level of security implements an approval mechanism. Some functions such as issuing a purchase order require a specific approval. Approvals may be granted to users on a project-by-project basis.

Both security profiles and approvals are defined separately from users. When users are added to Merlin, they are associated with a security profile. When users are added to a project (called persons), they are assigned another security profile and, optionally, a list of authorities. A user can thus have one security profile when logged in to a project and another when not.

Approvals

An Approval is a type of permission that may be granted to users assigned to a project. Approvals are required for the following functions:

Approve Requisition Stage
Approve Purchase Order
Issue Purchase Order
Cancel Purchase Order
Approve Purchase Order Revision

Authorities

An Authority grants an approval to a person so that he can carry out functions requiring that approval.

Security Profiles

A Security Profile defines a set of allowable functions that may be granted to a user.

Merlin's functions are defined as a hierarchy as follows:

- Global
  - User
    - Common Data
      - Vendors
      - General Data
      - Equipment
      - UID
    - Projects
      - Project Data
      - Purchasing
        - Requisitioning
        - Expediting
        - Inspection Project
        - All Approvals
      - Project Approvals
    - Materials Management
    - Shipping
    - Receiving
    - All Projects
    - Inspection Management
    - Query
  - Administration
    - Housekeeping
    - Security
    - Corrections
    - System Options

The creation of security profiles is simplified by the hierarchical design. When a function is included in a profile all its child functions are also included. For example, a function including purchasing automatically includes requisitioning, expediting and inspection project.

The All Approvals function permits all operations that require an approval, such as PO Issue, without creating specific authorities.

The project approvals function permits the granting of approvals to users assigned to projects, i.e. authorities.

The all projects function permits access to all projects as they are created.

A Data Items

Data Type	Data Fields
Accounting Distribution	Account Amount of value Line Item Percentage of value Project code Requisition code
Address	Address Code Fax number Tel. Number Title VAT number
Area Code	Company area Title
Authority	Approval User identifier Project code
BOM Group	BOM Group Import Parameters Project code Title Zero net quantities Zero pad quantities
Carriage Terms	Code Project code Title
Certification Authority	Authority Title
Client	Address Code Title
Container	Container reference
Country	Country Title
Currency	Code Title
Duration	Duration Milestone set Preceeding Event Project code Title
Equipment Hazard Type	Rating Title
Equipmnt	Equipment Title
Equipment Type	Type Equipment Title
Exchange Rate	Currency Project code

Rate of exchange

Data Type	Data Fields
Expediting Requisition	Accepted exworks date Actual exworks date Client inspect required Coordinator Forecast exworks date Forecast last inspection date Inspector Interim visit date Last vendor contact date Last update date Next inspection date Pre-inspection meeting date Project code QA. Plan Requisition code Vendor data complete
Expediting Item Forecase	Comments Line Item Project code Quantity Date ready Requisition code Batch
Expediting Text	Created date Date User identifier Line Item Project code Requisition code Number Comments
GL Area Code	GL area Vendor code GL vendor number
Goods Received Note	Received date GRN number Location Project code Receiver name Receiver
Goods Received Item	Comments Damaged GRN GRN line number Line Item Unit of measure Packing iitem Packing list Part number Project code Quantity Requisition code Shipment number
Inspection Agency	Agency code Title

Data Type	Data Fields
Inspection Failure Note	Inspection fail date Failure number Inspection date Project code
Inspection Failure Item	Action required Quantity failed Failure Number Inspected quantity Line Item Project code Reasons for failure Requisition code
Inspection Visit	Estimated inspection date Expediting cost Inspection agency Inspection cost Actual inspection date Invoiced cost Invoice date Invoiced manhours Agencies invoice number Location of visit Inspector name code Project code Inspectors report date Inspectors report number Requisition code Visit number
Inspection Release Note	Approved status Inspection date Inspection release note Inspection release note date Project code Inspection type
Line Item	Distributions valid Billable Certification required Commercial Text Commercial item Delivered quantity Item Description Engineered description flag Estimated weight First shipment date Inspection visits required Line Item Last shipment date Unit of measure Moved quantity Project code Quantity Released quantity Requisition code Dimension X Dimension Y Dimension Z

Units

Data Type	Data Fields
Line Item (continued)	Shipped quantity Units Special handling Substiture UID Tag Title UIC Unit price Vendor data required
Line Item Part	Line Item Part number Project code Requisition code Title
Material Movement Item	Line Item MMT number Quantity for movement Part number Project code Requisition code
Material Movement Ticket	Approved Expected delivery date Location code MMT date MMT number Packing inspection Project code
Named Event	Event name Title
Network	Network Project code Title
Organisation Structure Element	Organisation structure Element Parent element code Title
Organisation Structure Link	Entity key Element Organisation structure Topic
Organisation Structure Type	Organisation structure Title
Payment Term	Payment term Project code Title
Person	Fax number Manager Name Identifier Security profile Project code Tel. Number Title

Data Type	Data Fields
Packing List	Avaliable for shipping Container reference On board date Packing list number Project Shipment number
Packing Item	Line Item Unit of measure Packing item Packing list Part number Project code Quantity Requisition code Dimension X Dimension Y Dimension Z Units Shipment number Units Weight
PO Variation	Approved date Client change Contract claim Cost controller Created date Days slippage from contract Delivery changed Originator POV number Project engineer Project code QA engineer Reason Requisition code Revision number Revision value Status Title Vendor response Vendor response date
PO Variation Reason	Project code Code Title
Procurement Plan	Actual date Override date Duration Forecast date Event code Planned date Preceding event code Project code Requisition code

Data Type	Data Fields
Project	Accounting distributions required Approve PO Cancel PO Issue PO Revise PO Approve Stage Company area Billable Carriage terms Client contract no. Certification authority Certificates required Client reference Client company Default budget Project currency Format Format Document item numbering Document numbering Project end date Allow edit ROS float to Frequency Enforce titles Imperial units Inspection required Format Line item numbering LIve project Sites location Project manager Materials manager Company contract no. Packing Project fax number Check PO completion Format PO numbering Project code Use project PO number QA engineer Float critical Requisition format Requisition prefix Requisiitoning site Float warning Project start date Title Transport method Last Unique Number Vendor data required
Project Named Event	Event name Project event Project code
Project Phase	Project phase

Title

Data Type	Data Fields
Project Receiver	Project code Receiver code Heading #1 Heading #2 Event code Preceeding event code Project code Title
QA Surveillance Grade	Inspection required Surveillance grade Text Title
Quality Certification	Code Title
QTO Requirement	Autopad increase BOM group Item description Unit of measure Total net quantity Net required quantity Pad amount PO total Project code Generic requisition code Selected Requisition total Surplus Target quantity Total new requirement UIC
Release Item	Inspected date Inspected quantity Inspection release note Line Item Project code Released quantity Requisition code
Resource Distribution	Network Event code Percentage of total Project code Resource code
Requisition Document Type	Type Project code Title
Requisition Document	Document number Document type Project code Requisition code Revision number Revision date Title

Data Type	Data Fields
Requisition	Allocated max allowance
	BOM Group
	Material cost
	Bid return address
	Bid extend date
	Bid return date
	Recommended bid tab vendor
	Billable
	Lowest bid opening price
	2nd lowest bid opening price
	Carriage terms
	Certification required
	Certification authority
	Client reference number
	Merged with
	Completed
	Aknowledgement date
	Contract final inspection
	Contract FOB
	Critical phase
	Criticality rating
	Current budget
	Currency
	Current forecast
	Discount percentage
	Discount value
	Document number
	Engineering req. date
	Enquiry date
	Enquiry terms
	Equipment hazard rating
	Estimated handover date
	Fax order date
	First ex-works date
	Delivery frequency
	Generic requisition code
	Inspection agency
	Inspection required
	Invoice return address
	Last reqnoven key
	Last VDS number
	Last ex-works date
	Site location
	last inspection visit number
	Country of manufacture
	Default unit of measure
	Network
	Split into
	Commercial items value
	Material items value
	Original estimate
	PO State
	Packing required
	Payment terms
	Purchase order approved date
	Purchase order issue date

PO number

Data Type	Data Fields
Requisition (continued)	PO requisition date Port of exit PO specific terms Project allowance Project code QTO requisition Quoted delivery date Rating performance of PO QA engineer Buyer Requisition created date Engineer Expeditor Float Requisition stage Requisition code Shipping clerk Requisitioning site Revision approved date Revision created date Revision issued date Revision number Revised on-site date Required by date Sealed bid Shipping budget Shipping required Special handling Vendor code Title Transport Vendor data required
Requisition Inspection	Agency Project code Requisition code Status
Requisition Stage	Approval Approval event Line item numbering Engineering stage Enquiry stage Evaluation stage FAX stage PO Stage Notify buyer Notify engineer Notify expeditor Notify inspector Notify shipping clerk Message text Start expediting Start inspection Generate PO Allow PO revisions Preceeding stage Project code

Permit requisition split/merge

Data Type	Data Fields
Requisition Stage (continued)	Issue PO Issue PO requisition Issue engineering requisition Bid evaluation Fax PO Issue enquiry requisition Requisition stage Title
Requisition Type	Surveillance grade Equipment hazardous rating Unit of measure Generic requisition code Title
Requisition Vendor	Country code Vendor contact for enquiry Currency Evaluated vendor Exchange rate Project code Remarks Requisition code Requisition vendor code System vendor code Title Fax number Tel. Number
Requisitioning Site	Originating address Site Title
Requisition Subcontractor	Address Comments Contact Item description Exworks date Fax numbet Last contact date Last promise date Order number Project code Requisition code Code Tel. Number Title
Resource Name	Project code Resource Title
Security Profile	Profile Title

Data Type	Data Fields
Shipment	Arrival location Departure date Depareture location ETA date Invoice date Invoice numbe Invoice value Port of entry Port of exit Project code Shipment number Ship name Shipment terms Shipping vendor code Title Transport Vendor's works
Shipping Terms	Code Title
Site/Delivery Location	Address Location Project code Site title
Standard Text	Project code Text Text type Title
Tag	Project code Tag number
Transport Method	Title Transport method
UIC	Description UIC
Unit of Measure	Integer quantity Code Title Unit type
User	Approval cost authority Default bid address Current project E-mail address First name Identifier System user identifier Initials Invoice return address Last name MAPI default profile MAPI profile Name Security profile Originating site code
User Text	Entity key User text Code

Data Type	Data Fields
Vendor	Address Agent Construction Designer Fax number E-mail address Issue registration date Last review date Manufacturer Vendor performance Purch. performance factor QA performance factor Receive regisitration date Requisition site Group code Services Supplier Vendor code Tel. number Title Rating Works address Works fax number Works tel. numnber
Vendor Agent	Agent vendor code Vendor codd
Vendor Certification	Certificate number Certification Vendor code
Vendoir Concession	IRN Line Item Project code Requisition code Title Concession action Concession description Concession number
Vendor Contact	Contact code E-mail address Fax number Contact name Vendor Key Tel. No Position Held
Vendor Data Schedule	Document code Line Item Media Project code Quantity Remarks Requisition code Submitted date Title Vendor document number
Vendor Equipment	Equipment Type Equipment


Vendor code

Data Type	Data Fields
Vendor Rating	Code Description Title