

Keppel Steria Consortium (KSC)

LAND TRANSPORT AUTHORITY



MAINTENANCE MANAGEMENT SYSTEM

OPERATION MANUAL COSWIN ASSET VOLUME 4 OF 11

Ref.: 756/PMP/8029d/A

KSC Version: 2.1

Date: 21 August 2002


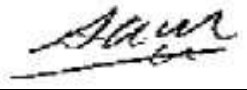

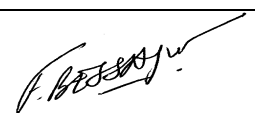
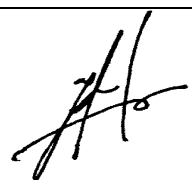
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1. INTRODUCTION

The Operation Manual shall describe in details all the functionalities of the Maintenance Management System (MMS).

COSWIN is a maintenance management tool specialised in assisting the monitoring and tracking maintenance works. It provides a set of comprehensive and configurable options for users to customise the software to meet their operational needs.

This document is the COSWIN Asset volume of the MMS Operation Manual. It explains the fundamental blocks of COSWIN, in particular, the ASSET, or also known in COSWIN term, Equipment.

Chapter 1 provides a general introduction to COSWIN.

Chapter 2 describes the Plant Calendar used in COSWIN.

Chapter 3 explains about the various fundamental References modules necessary for the running of COSWIN.

Chapter 4 describes the Equipment Register and its associated modules.

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2. PLANT CALENDAR

Path: Maintenance / Plant Calendar

In COSWIN, the calendar modules are used to define the calendars of the production department in the plant, on different levels.

The calendars are defined over a period of time according to the following criteria:

- The period is made up of a number of years which have to be contiguous
- All calendars will contain at least the mandatory period

The mandatory period is the period between the years BEGIN and END defined in the *Calendar Control of COSWIN Configuration's Maintenance module*.

There are five different calendars that may be defined in COSWIN:

1. **Plant Calendar:** It is the global calendar for the production department of the plant and is mandatory for any maintenance transaction in COSWIN.
2. **Equipment Calendars** (not mandatory): There may be equipment with production calendars different from the global calendar, i.e., the plant calendar, for such equipment, calendars may be defined.

The rules to determine the calendar to be used, for an equipment without its own calendar, are:

- If the parent equipment of the given equipment has a calendar, use parent calendar
 - If the system equipment of the given equipment has a calendar, use system calendar
 - If the equipment is in exactly one group and the group has a calendar, use group calendar
 - If the function of the equipment has a calendar, use function calendar
 - If the zone of the equipment has a calendar, use zone calendar
 - If none of the above mentioned calendars is defined, use the plant calendar
3. **Zone Calendar** (not mandatory)
 4. **Function calendar** (not mandatory)
 5. **Employee Calendars:** Each employee has a calendar, defined for the mandatory period, based on the plant calendar; the employee calendars should be customised for each employee.

The rules to obtain an employee calendar from plant calendar are:

- The holiday and weekly off days from the plant calendar remain holiday and weekly off days in the employee calendar
- The shutdown days from the plant calendar become leave days in the employee calendar
- All the other days from the plant calendar become working days in the employee calendar

The information stored in the calendars is:

- Type of day:
 - common for equipment and employees: normal working day, peak production, weekly off, holiday
 - only for equipment (and for the plant calendar): shutdown day
 - only for employees: leave, absence
- Absence hours, only in the employee calendars and only for absence days

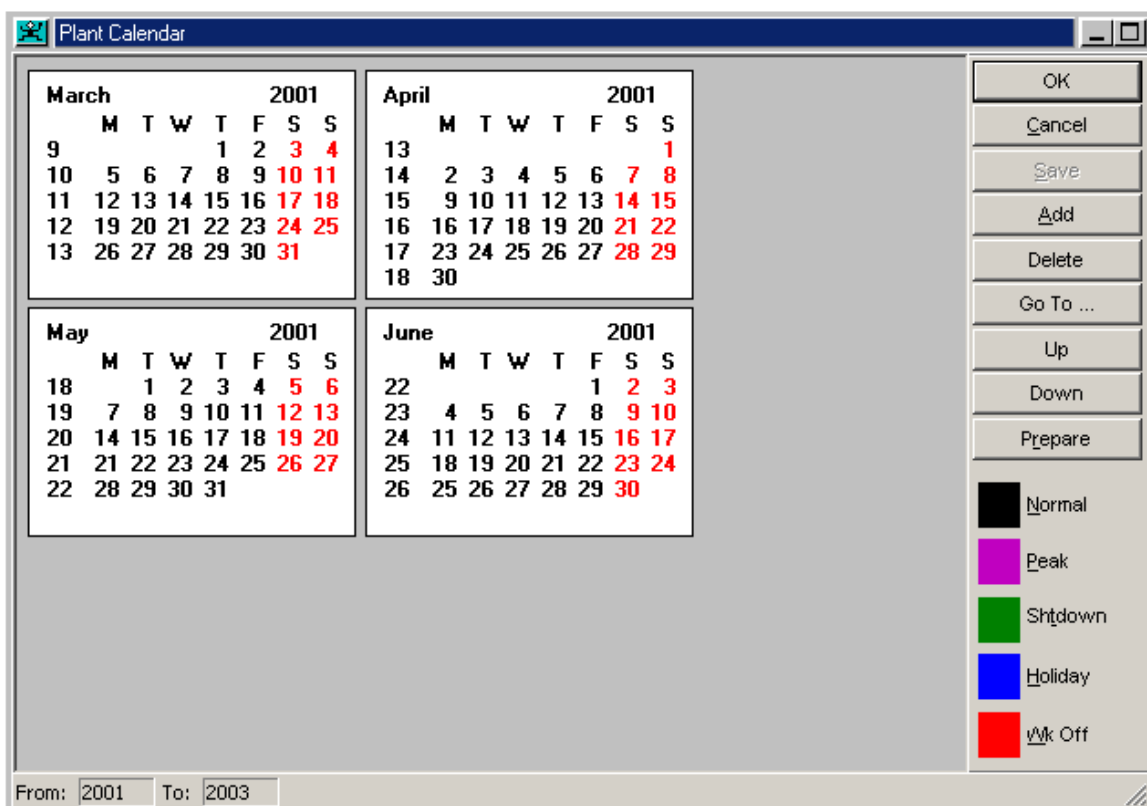
Defaults for Calendars Creation

When the plant calendar is first created or a new year is added, the days are set to "normal working days", except for Sundays and Saturdays, which are set to "weekly off". This can be changed in parameters, where the user can specify other days in week to be "weekly-off".

When a calendar is first created for an equipment, the plant calendar is copied by default for the period defined for the equipment calendar. This period cannot exceed the period where the plant calendar is defined.

Select from COSWIN menu *Maintenance / Plant Calendar* to launch the Plant Calendar module.

The Plant Calendar window looks by default as follows:



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Window Buttons Descriptions:

ADD

Extends the Calendar, since and / or until specified years, so that all of the following restrictions must be satisfied, simultaneously:

- The covered period must be contiguous (between any existent periods there must not exist an uncovered period; e.g. if 1996 Calendar exists, and 1993 Calendar is specified, the covered period will finally be 1993, 1994, 1995, 1996)
- The covered period must include the mandatory period specified in COSWIN parameters

DELETE

Deletes a specified period, provided that the following restrictions are satisfied:

- The period to be deleted extends from the Calendar period beginning or until the Calendar period ending
- The mandatory period is not deleted

Go To

Displays a user-specified period, among the existent Calendar periods.

Up

Displays the previous month from the current year.

Down

Displays the next month from the current year.

Prepare

Opens **Prepare Calendar for Printing** window, in order to provide printing options.

Normal

Specifies that the user selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a normal production period.

Peak

Specifies that the user selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a peak production period.

Shutdown

Specifies that the user selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a shutdown production period.

Holiday

Specifies that the user selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a holiday period.

Weekly Off

Specifies which of the user selected period days of week will be considered weekly rest days.

Prepare Calendar for Printing

The purpose of this window is to provide user-transparent supplementary information for printing the Calendars from REPSTAR.

Detailed Fields Description:

From

Enter lower-limit of the Calendar period to be exported for printing. It is a mandatory information.

To

Enter upper-limit of the Calendar period to be exported for printing. It is a mandatory information.

Plant calendar

This information specifies that the Plant Calendar is always exported for printing.

Equipment calendars

This option specifies whether Equipment Calendars will be exported for printing, or not.

Employee calendars

This option specifies whether Employee Calendars will be exported for printing, or not.

Resources

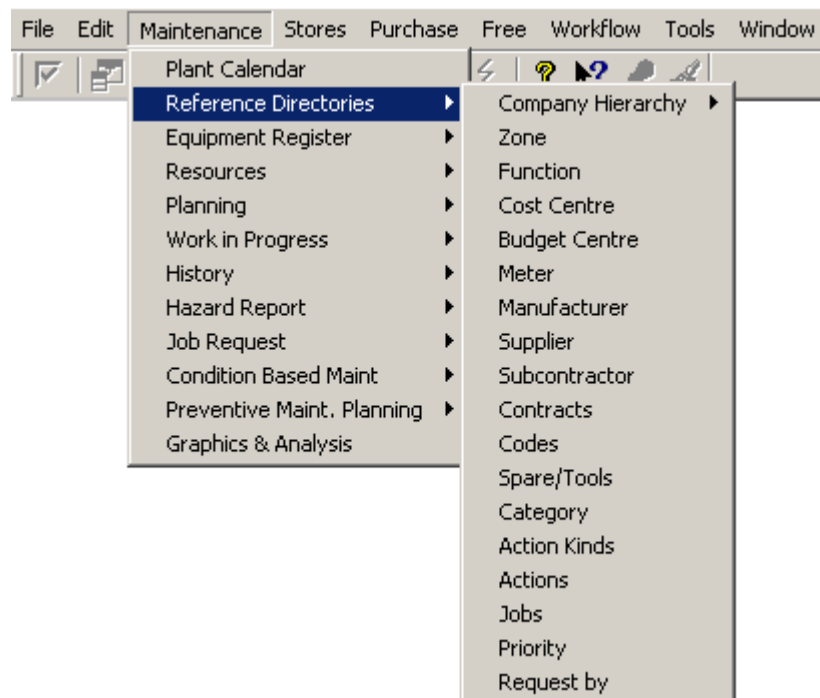
This option specifies whether Resource availability is to be exported for printing, or not.

3. MAINTENANCE REFERENCES

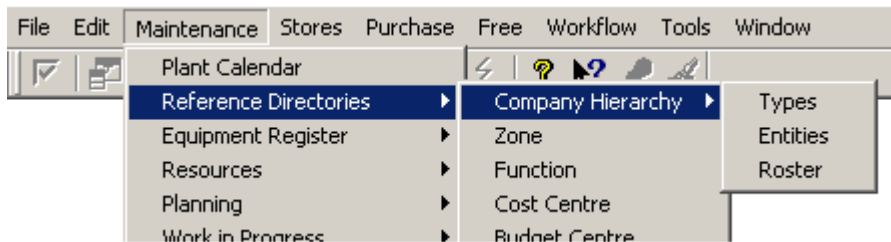
These reference directories are a group of references necessary to support the Maintenance modules of COSWIN.

The purpose of maintenance reference directories is:

- To define the company hierarchy
- To define the basic entities to be used in asset definition and management:
 - Zone
 - Function
 - Category
 - Cost centre
 - Codes to be used in defects and diagnosis definition
- To define the spares and tools used for maintenance activities



3.1 COMPANY HIERACHY



The company hierarchy structure is used to define the authority over different maintenance entities: equipment, employee and items.

It is a set of parent-child relations between company entities.

The following rules must be respected for the company hierarchy structure:

- Each company entity has maximum 1 parent
- A company hierarchy can have any number of children

The company entities have to be defined before using them in a hierarchy. Company entities are placed on level 1 when created. Their level is updated when they are placed in a structure.

3.1.1 Company Types

Path: Maintenance / Reference Directories / Company Hierarchy / Types

Entity types are used to define the type of different nodes in the company hierarchy. Some types that can be defined are:

- Company
- Division
- Department
- Section
- Workgroup
- Team

The module shall be used to define additional entity types and to delete unused ones (unused entity types are entity types not linked to any company entity).

Select from COSWIN menu *Maintenance / Reference Directories / Company Hierarchy / Types* to launch the Company Type module.

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The Company Type Details window looks by default as follows:

Detailed Field Descriptions:

Code

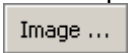
This is the company type identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Company Types.

A selector trigger button (or F2 key) linking to Company Type Selector is available.

Description

This is the company type description, an optional information of maximum 40 alphanumeric characters.

Icon

This is the graphical icon representing the company type. To change the icon, click on the non-standard button  and select from the available icons displayed.


Default type

If checked, indicate that the current company type is the default company type for the system. This is a read-only information, automatically updated by system. The default company type can only be amended through the COSWIN Configuration's Maintenance / Default Codes.

3.1.1.1 To Add A New Company Type

Minimum information required to add a new Company Type is:

- Type code

Click on the  icon to launch the ADD window.


3.1.1.2 To Modify a Company Type

All the company type's details may be modified, except for the type's identifier.

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3.1.1.3 To Delete a Company Type

The company type can be deleted as long as there is no company entity associated with it.

Click on the  icon to delete the current Company Type.

3.1.2 Company Entities

Path: Maintenance / Reference Directories / Company Hierarchy / Entities

This module manages the details regarding a company entity.

The following information is displayed for each company entity:

- Equipment under the company entity authority
- Employees under the company entity authority
- Stores under the company entity authority
- Stock items under the company entity authority
- Shift Patterns of the company entity authority
- Roster List of the company entity authority

Select from COSWIN menu *Maintenance / Reference Directories / Company Hierarchy / Entities* to launch the Company Entity Details module.

The Company Entity Details window looks by default as follows:

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Detailed Field Descriptions:

Code

This is the entity identifier, a mandatory information of maximum 16 alphanumeric characters. It must be unique among all Company Entities.

A selector trigger button (or F2 key) linking to Company Entity Selector is available.

Description

This is the entity's description, a mandatory information of maximum 40 alphanumeric characters.

Type

This is the company type, a mandatory information. It must exist in the directory of Company Types.

A selector trigger button (or F2 key) linking to Company Type Selector is available.

Right-mouse click (or F7 key) will activate the Company Type Details window for the current code.

Type Description

This is the type's description, a read-only information automatically managed by system.

Default company entity

This checkbox, if checked, indicate that the company entity is the default one. This is a read-only information automatically managed by system.

The default Company Entity can only be amended through the COSWIN Configuration's Maintenance / Default Codes.

Level

This identifier indicates the level that the entity resides in the entity structure. It is a read-only numeric information automatically managed by the system when the entity is placed in a structure.

Eqpt Prefix

This 6-alphanumeric characters prefix is to be used in equipment barcodes auto-generation. It is a mandatory information if the equipment barcode generation method defined as '4-Company Hierarchy' in COSWIN Configuration's Maintenance / Bar Codes.

Parent Entity

This is the identifier of the parent entity for the current entity, a read-only information automatically managed by the system when the entity is placed in a structure.

System Entity

This is the identifier of the system entity for the current authority, a read-only information automatically managed by the system when the entity is placed in a structure.

Eqpt Suffix

This is the last serial number used for the equipment barcode auto-generation. It is a read-only information automatically incremented by the system every time new equipment is created under the company entity authority.

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ADDRESSES TAB:

Address and Other Information

These are the addresses of the entity. The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.

CONTACTS TAB:

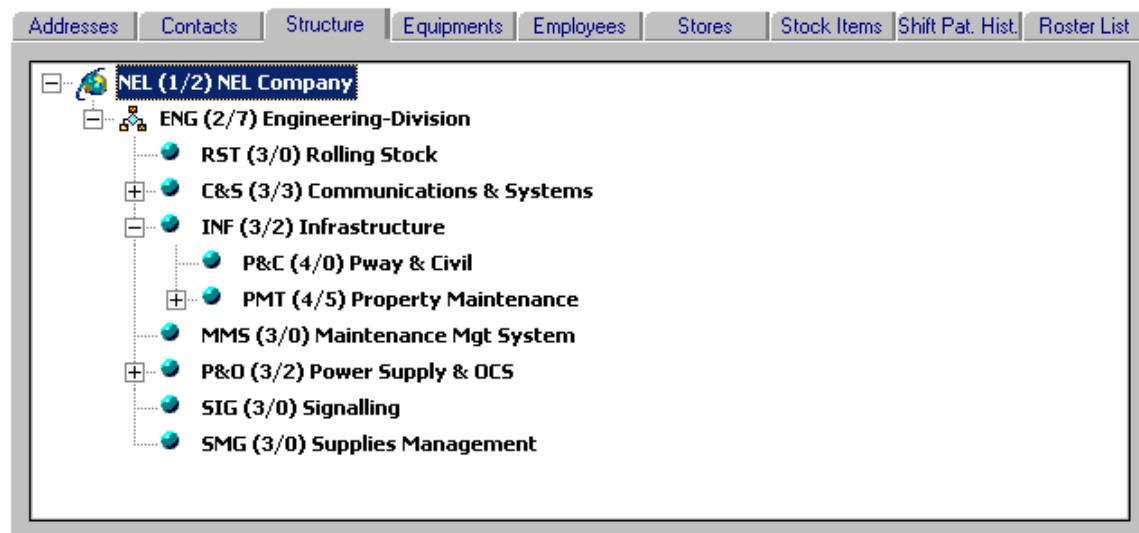
The Contacts tab of Company Entity Details window looks by default as follows:

Technical & Commercial contact point

These contact points store the name of contact person, two phone numbers, a fax number and a telex number and the e-mail address for the contact person. All these information are optional and of maximum 40 alphanumeric characters.

STRUCTURE TAB:

The Structure tab of Company Entity Details window looks by default as follows:



The purpose of Companies Structure is to provide a visual interface for establishing parent-child relationships between different Company Entities.

The following rules must be respected for the entity hierarchy structure:

- The entity structure is tree-like
- Each entity has maximum 1 parent
- All entities can have any number of children
- There are no loops in the structure (i.e. if E1 is a child of E0 and, E2 is a child of E1, then E0 cannot be a child of E2.)

This interface consists of a layout, where Company Entities are drawn along with their parent-child links. In this layout, there is the following information:

- The Company's Structure appearance, in a folder-like manner: when the folder is opened, the Companies 's children are shown (if any)
- Numeric information besides each Company Entity denotes its level in the hierarchy and its number of children (in the format 'level / children no.', enclosed with parentheses)
- The links between each parent and its children, drawn as lines
- The company type of each Company Entity is represented by the its corresponding icon

EQUIPMENT TAB:

The Equipment tab of Company Entity Details window looks by default as follows:

Addresses Contacts Structure Equipment Employees Stores Stock Items Shift Pat. Hist. Roster List						
T Eqpt Code	T Description	T Zone	T Function	T Category	T Cost Cen	
ECS/BGKACS	AIR-CONDITIONING SYSTEM - BGK	NEL	NEL	NEL	2722110	
ECS/BGKCDS	CD EQUIPMENT - BGK	NEL	NEL	NEL	2722110	
ECS/BGKCWS	ECS PLANT AND OTHER EQUIPMENT - BGK	NEL	NEL	NEL	2722110	
ECS/BGKELE	OTHER EQUIPMENT - BGK	NEL	NEL	NEL	2722110	
ECS/BGKGES	GAS EXTRACT SYSTEM - BGK	NEL	NEL	NEL	2722110	
ECS/BGKMVS	MECHANICAL VENTILATION SYSTEM - BGK	NEL	NEL	NEL	2722110	
ECS/BGKSENSOR	SENSOR FOR BGK	NEL	NEL	NEL	2722110	
ECS/BGKSES	STATION EXTRACT/SMOKE PURGE SYSTEM - BGK	NEL	NEL	NEL	2722110	
ECS/BGKTVS	TUNNEL VENTILATION SYSTEM - BGK	NEL	NEL	NEL	2722110	
ECS/BGKUPES	UNDERPLATFORM SYSTEM - BGK	NEL	NEL	NEL	2722110	
ECS/BNKACS	AIR-CONDITIONING SYSTEM - BNK	NEL	NEL	NEL	2722110	

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This tab displays the list of equipments belonging to the company entity. It is automatically managed by the system and cannot be amended by users.

Double click on any of the equipment record will present the selected record in the **Equipment Topographical Details** window.

Company Equipment List Box

This list box displays the equipment under this company's authority.

Equipment Code	This is the code of the equipment.
Description	This is the description of the equipment.
Zone	This is the zone of the equipment.
Function	This is the function of the equipment.
Category	This is the category of the equipment.
Cost Centre	This is the cost centre of the equipment.
WP Type	This is the work permit type of the equipment.
Parent Type	This is the parent equipment for the current equipment.
System Entity	This is the system equipment for the current equipment.
Level	This is the level of the equipment in the structure.
Bar Code	This is the bar code of the equipment.
Item	This is the repairable item linked to the equipment.
Last Update	This is the last date when the equipment was updated.

EMPLOYEE TAB:

The Employee tab of Company Entity Details window looks by default as follows:

Addresses	Contacts	Structure	Equipment	Employees	Stores	Stock Items	Shift Pat. Hist.	Roster List
Employee No	Name	Resource	Hire Date	Review Date				
057444	Ronald Tan	PwY-TO	24/12/2000	24/12/2001				
109889	Lee Gim Chew	SIG-STO	24/12/2000	24/12/2001				

This tab displays the list of employees belonging to the company entity. It is automatically managed by the system and cannot be amended by users.

Double click on any of the employee record will present the selected record in the **Employee Details** window.

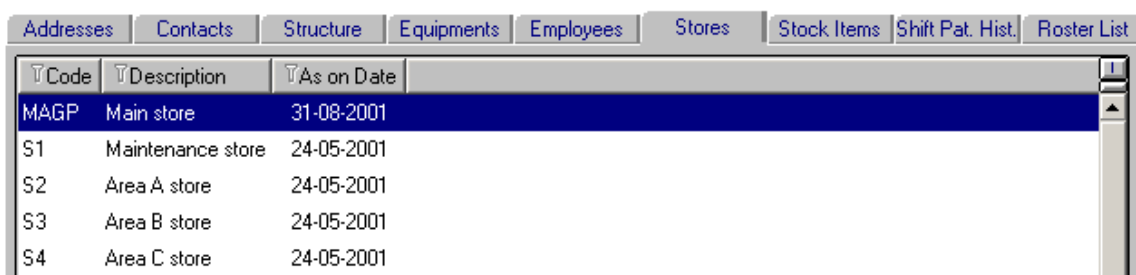
Company Employees List Box

This list box displays the employees under this company's authority.

Employee No.	This is the code of the employee.
Name	This is the description of the employee.
Resource	This is the resource that the employee belongs to.
Hire date	This is the date when the employee was hired.
Review date	This is the date when the employee should be reviewed.

STORE TAB:

The Store tab of Company Entity Details window looks by default as follows:



TCode	TDescription	TAs on Date
MAGP	Main store	31-08-2001
S1	Maintenance store	24-05-2001
S2	Area A store	24-05-2001
S3	Area B store	24-05-2001
S4	Area C store	24-05-2001

This tab displays the list of stores belonging to the company entity. It is automatically managed by the system and cannot be amended by users.

Double click on any of the store records will present the selected record in the **Store Details** window.

Company Stores List Box

This list box displays the stores under this company's authority.

Code	This is the code of the store.
Description	This is the description of the store.
Last Modified Date	This is the last date when the store was updated.

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STOCK ITEMS TAB:

The Stock Items tab of Company Entity Details window looks by default as follows:

Addresses

Contacts

Structure

Equipment

Employees

Stores

Stock Items

Shift Pat. Hist.

Roster List

TItem Code	TDescription	TStore	TGroup	TCategory	TType	TClass	T
SIGNAL/ATC/01/01	Wired Trainborne ATC Cubicle Type 1	TRANSIT	SIG	NEL	2	A	2
SIGNAL/ATC/01/02	Wired Trainborne ATC Cubicle Type 2	TRANSIT	SIG	NEL	2	A	2
SIGNAL/ATC/02/00	Wired Trackside ATC Cubicle	TRANSIT	SIG	NEL	2	A	2
SIGNAL/ATC/03/01	Trainborne ATC Cubicle Card Type BAL001	TRANSIT	SIG	NEL	2	A	2

This tab displays the list of stock items belonging to the company entity. It is automatically managed by the system and cannot be amended by users.

Double click on any of the stock item records will present the selected record in the **Stock Register** window.

Company Stock List Box

This list box displays the stock items under this company's authority.

Item Code	This is the code of the stock item.
Description	This is the description of the stock item.
Store	This is the main store of the item.
Group	This is the group of the item.
Category	This is the category of the item.
Type	This is the item type: 0 – Consumable 1 – Non-Consumable 2 – Repairable
Class	This is the item's ABC class.
Cost Centre	This is the cost centre of the item.
Orig. supplier	This is the original supplier of the item.
As on Date	This is the last date when the item was updated.
Procurement date	This is the date when the stock item was procured.

SHIFT PATTERN HISTORY TAB:

The Shift Pattern History tab of Company Entity Details window looks by default as follows:

Addresses	Contacts	Structure	Equipment	Employees	Stores	Stock Items	Shift Pat. Hist.	Roster List
T Shift Pattern Code	T Description	T Start Date	T End Date	T In Use				
SIG-SP	Signalling Shift Pattern	02/12/2001	04/12/2003	Y				
SIG-SP	Signalling Shift Pattern	05/12/2003	01/02/2004	Y				
SIG-SP	Signalling Shift Pattern	01/03/2004	01/05/2004	N				

This tab associates a shift pattern to the company entity.

Refer to the chapter **Shift and Roster Management** under COSWIN WORK Volume for details on how to attach a shift pattern to a company entity.

Company Shift Pattern List Box

This list box displays the Shift Patterns attached to this company's authority.

Shift Pattern code	This is the code of the shift pattern.
Description	This is the description of the shift pattern.
Start Date	This is the start date of the shift pattern.
End Date	This is the end date of the shift pattern.
In Use	'Y' indicates the Shift Pattern is currently in use. 'N' is otherwise.

ROSTER TAB:

The Roster List tab of Company Entity Details window looks by default as follows:

Addresses	Contacts	Structure	Equipment	Employees	Stores	Stock Items	Shift Pat. Hist.	Roster List
T Roster Code	T In Use	T Start Date	T End Date	T Last Update				
ROST000016	Y	09/04/2002	23/07/2002	09/04/2002				

This tab displays the list of rosters belonging to the company entity. It is automatically managed by the system and cannot be amended by users.

Double click on any of the roster record will present the selected record in the **Roster Details** window.

Refer to the chapter **Shift and Roster Management** under COSWIN WORK Volume for details on how to create a Roster for a company entity.

Company Roster List Box


This list box displays the Roster lists of this company's authority.

Roster Code	This is the code of the roster.
In Use	'Y' indicates the roster is currently in use. 'N' is otherwise.
Start Date	This is the start date of the roster.
End Date	This is the end date of the roster.
Last Update	This is the last date when the roster was updated.

3.1.2.1 To Add a New Company Entity

Minimum information required to add a new Company Type is:

- Code
- Description
- Type

Click on the  icon to launch the ADD window.

When a company entity is created, it is placed on level 1 of a structure with its system and parent entity being itself.

3.1.2.2 To Modify a Company Entity

All the company type's details may be modified, except for the entity's identifier.

3.1.2.3 To Delete a Company Entity

Company entities can be deleted if:

- There is no equipment under the company entity authority
- There is no employee under the company entity authority
- There is no item under the company entity authority
- There is no store under the company entity authority
- It is not the default company entity

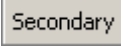
Click on the  icon to delete the current Company Entity.

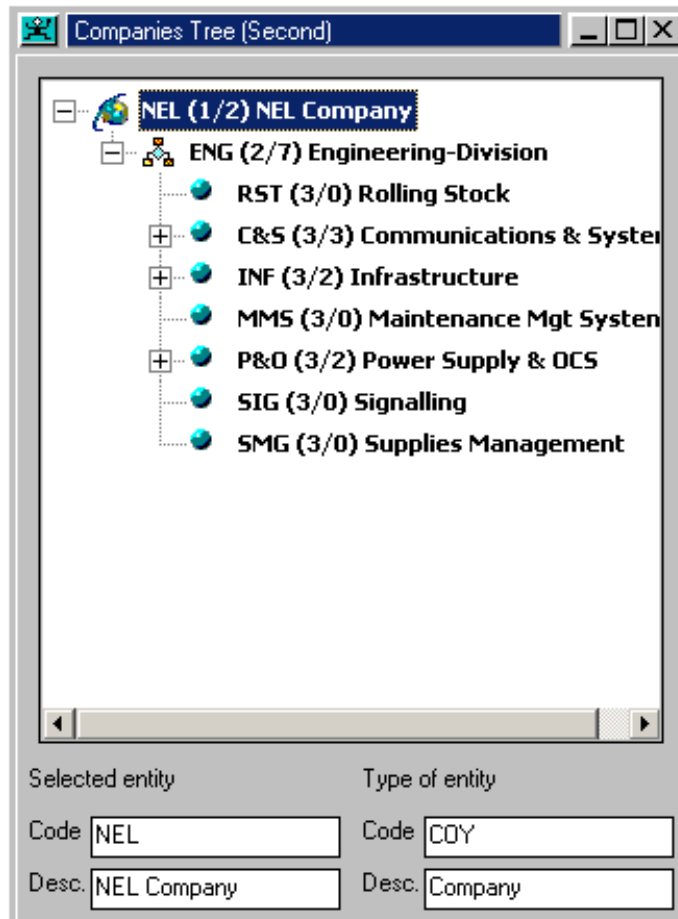
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3.1.2.4 To connect a Company Entity to a Structure


Select the entity that is to be the parent entity at the **Entity Code** field of the Company Entity Details window.

Click onto the Structure tab of Company Entity Details window.

Click on the non-standard button  on the COSWIN toolbar and a Companies Tree (Second) window appears:



Drag the child entity icon from Companies Tree (Second) window and drop it onto the parent entity icon at the Entity Structure window. A link will be formed.

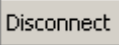
Click on the  icon to save and a new structure will be created.

Note: All entities must first be defined before being associated to a hierarchy structure.

3.1.2.5 To Disconnect a Company Entity from a Structure

Select the parent of the entity to be disconnected from structure at the **Entity Code** field of the Company Entity Details window.

Click onto the Structure tab of Company Entity Details window.

Select the child entity to be disconnected in the hierarchy structure window and click on the non-standard  button.

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3.2 ZONE

Path: Maintenance / Reference Directories / Zones

A zone is an indication concerning the geographical situation of the equipment. It is used to group the equipments from a delimited physical area. Examples of zones are: a building, a section of a building, a floor, a factory (a compact one) of a big company.

A piece of equipment can only be attached to one zone. However, a zone can include several equipments. A zone cannot be deleted if an equipment or group of equipment is attached to it.

There is a default zone (its code is established in the COSWIN Configuration module), which cannot be deleted.

A Zone has its own Calendar that displays the Zone usage, during a specified period of time.

Costs analysis is provided for each zone over the years in the mandatory period. The analysis determines the costs, no. of work orders, date of last job, etc. for each year or for the entire period.

When new zones are created, void analysis years are added to them for all the years in the mandatory period.

Select from COSWIN menu *Maintenance / Reference Directories / Zones* to launch the Zone Details module.

The Zone Details window looks by default as follows:

The screenshot shows a Windows-style window titled "Zone Details". Inside the window, there are three labeled input fields:

- Zone:** A dropdown menu with "BGK" selected.
- Description:** A text box containing the text "Buangkok".
- Incharge:** An empty text box.

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Detailed Field Descriptions:

Zone

This is the Zone identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Zones.

A selector trigger button (or F2 key) linking to Zone Selector is available.

Description

This is the Zone description, an optional information of maximum 40 alphanumeric characters.


In-charge

This is the name of the person who supervises the zone, an optional information of maximum 10 alphanumeric characters.

3.2.1 To Add a New Zone

Minimum information required to add a Zone, is:

- The Zone identifier

Click on the  icon to launch the ADD window.

3.2.2 To Modify a Zone


All the information can be modified, except:

- The Zone identifier

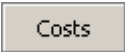
3.2.3 To Delete a Zone

A Zone cannot be deleted, if

- There are Equipment or Group instances located in that Zone
- It is the default zone

Click on the  icon to delete the current Zone.

3.2.4 To View Cost Analysis by Zone

Click on the non-standard  button to view cost analysis by the specified zone:

Costs for : BGK

As on date : 13/05/2002

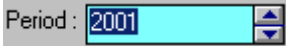
Period : 2002

At : 17:22

INTERNAL	Planned	Unplanned	Others	Totals	%
Resource :	920.00	1412.50	0.00	2332.50 (	14.01)
Material :	2910.00	7897.19	0.00	10807.19 (	64.93)
Facility :	1053.00	22.00	0.00	1075.00 (	6.46)
Misc :	1630.00	800.00	0.00	2430.00 (	14.60)
Totals :	6513.00	10131.69	0.00	16644.69 (	100.00)
%	(39.13)	(60.87)	(0.00)	(100.00)	
WDs :	31	114	0	145	
D/Time :	25.10	169.00	0.00	194.10	
P/Loss :	0.00	0.00	0.00	0.00	
Last Job :	03/04/2002	08/05/2002			

☒ Internal
 ☐ External
 ☐ Total

The information displayed are read-only, automatically managed by the system.

These costs represent a balance sheet of the expenses made against the selected zone for the selected year specified at .

The available periods for Cost Analysis are defined in COSWIN Configuration's Maintenance / Analysis Control.

The costs displayed are extracted from the Work Order History module.

This module provides a radio button group  to view the type of costs:

- Internal refers to those work orders performed by the local team
- External refers to those work order performed by a third party
- Total refers to both Internal and External

The 3 columns Planned, Unplanned and Others represent the work order types available.

Detailed Field Descriptions:

Resource

This row specifies the Planned / Unplanned / Other / Total Manpower Costs for the specified criteria.

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Material

This row specifies the Planned / Unplanned / Other / Total Material Costs for the specified criteria.

Miscellaneous

This row specifies the Planned / Unplanned / Other / Total Miscellaneous Costs for the specified criteria.

Totals

This row specifies the Planned / Unplanned / Other / Total added Costs (Resource + Material + Miscellaneous) for the specified criteria.

%

This row specifies the percentage of Planned / Unplanned / Other Costs, respectively, from the TOTAL Costs.

Work Orders

This row specifies the number of generated Work Orders (Planned/ Unplanned / Other / Total) allocated for the specified criteria.

Down Time

This row specifies the number of hours (Planned / Unplanned / Other / Total) the equipment did not work for the specified criteria.

Production Loss

This row specifies the Planned / Unplanned / Other / Total production loss, due to the equipment down time, for the specified criteria.

Last-Job

This row specifies the last Job date (Planned / Unplanned / Other / Total) for the specified criteria.

Costs Type

This radio-button specifies the type of the Costs to be displayed:

- Internal** Internal Costs will be displayed
- External** External Costs will be displayed
- Total** Total Costs (both Internal and External) will be displayed

3.2.5 To View the Zone Calendar

Click on the non-standard Calendar button to view the calendar for the specified zone: (That is, the chronologically usage of the Zone)

The screenshot shows the 'Zone Calendar' application window. It displays a 6-month calendar for the year 2002, from May to October. The calendar is organized into a grid with days of the week (M, T, W, T, F, S, S) as columns and dates as rows. The date 8th May is highlighted in black. To the right of the calendar grid is a vertical toolbar with buttons: OK, Cancel, Save, Add, Delete, Go To ..., Up, Down, Plant Cal., Prepare, and a legend section with color-coded boxes for Normal (black), Peak (magenta), Shutdown (green), Holiday (blue), Wk Off (red), and Hrs/Day (yellow). At the bottom of the window, there are input fields for 'From' (2001), 'To' (2003), 'Def.:', 'Zone:', 'Code:' (BGK), 'Wrk. Hrs:' (0), and 'Start time:' (0:0).

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3.3 FUNCTION

Path: Maintenance / Reference Directories / Function

This module is used to manage the *functions*, i.e., create, modify or delete. Costs analysis is provided for each function over the years in the mandatory period. The analysis determines the costs, number of work orders, date of last job, etc. for each year or over the entire period.

A *function* groups the equipment with the same functionality characteristics.

A piece of equipment can only be attached to one function. However, a function can include several equipments. A function cannot be deleted if equipment or group of equipment is using it.

There is a default function (its code is established in the COSWIN Configuration module), which cannot be deleted.

A function has its own Calendar that displays the function used, during a specified period of time.

Costs analysis is provided for each function over the years in the mandatory period. The analysis determines the costs, no. of work orders, date of last job, etc. for each year or for the entire period.

When new functions are created, void analysis years are added to them for all the years in the mandatory period.

Select from COSWIN menu *Maintenance / Reference Directories / Function* to launch the Function Details module.

The Function Details window looks by default as follows:

Function: AFC/EIFS

Description: Electronic Integrated Fare System new

Function-In-Charge:

Capacity:

Rating:

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Detailed Field Descriptions:

Function

This is the Function identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Functions.

A selector trigger button (or F2 key) linking to Function Selector is available.

Description

This is the Function description, an optional information of maximum 40 alphanumeric characters.

Function-In-charge

This is the name of the person who supervises the Function, an optional information of maximum 10 alphanumeric characters.

Capacity

This is the Capacity measurement of the Function, an optional information of maximum 10 alphanumeric characters.

Capacity Unit

This is the Capacity measurement Unit, an optional information of maximum 10 alphanumeric characters.

Rating

This is the Rating measurement of the Function, an optional information of maximum 10 alphanumeric characters.


Rating Unit

This is the Rating measurement Unit, an optional information of maximum 10 alphanumeric characters.

3.3.1 To Add a New Function

Minimum information required to add a Function, is:

- The Function identifier

Click on the  icon to launch the ADD window.

3.3.2 To Modify a Function

All the information can be modified, except:

- The Function identifier

3.3.3 To Delete a Function


A Function cannot be deleted if:

- There are Equipment or Group instances allocated to that Function
- It is the default function

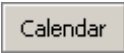
Click on the  icon to delete the current Function.

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3.3.4 To View Cost Analysis by Function

Click on the non-standard  button to view cost analysis by the specified function.
(Details similar to that of Zone.)

3.3.5 To View the Function Calendar

Click on the non-standard  button to view the calendar for the specified function.
That is, the chronologically usage of the function.
(Details similar to that of Zone.)

3.4 MAINTENANCE COST CENTRE

Path: Maintenance / Reference Directories / Cost Centre

The *cost centres* are used in maintenance to register all the costs for a group of maintenance activities. Any equipment, equipment job or work order must have a cost centre where the costs allocated accordingly when a job is finished. Employees are also defined with cost centres to charge their labour costs to.

The costs are tracked by means of the resources and spares needed to perform a task (equipment job manpower requirements and stock requirements) and by means of feedback against a work order. Maintenance costs are first captured through the work orders and subsequently registered in the cost centres when the work order is archived.

The cost information is kept in Analysis Year objects attached to the cost centre, one analysis year object for each year within the mandatory period and one analysed year for the up-to-date costs.

Above the cost centre, the user can define budgets. One budget may contain several cost centres and a cost centre may be included in several budgets.

Select from COSWIN menu *Maintenance / Reference Directories / Cost Centre* to launch the Maintenance Cost Centre Details module.

The Maintenance Cost Centre Details window looks by default as follows:

The screenshot shows a software window titled "Maintenance Cost Centre details". Inside the window, there are two main input fields. The first is labeled "Cost Centre:" and features a dropdown menu with the value "2712120" selected. The second is labeled "Description:" and is a text box containing the text "RS Corrective Maintenance". The window has a standard Windows-style title bar with minimize, maximize, and close buttons.

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Detailed Field Descriptions:

Cost Centre

This is the Cost Centre identifier, a mandatory information of maximum 16 alphanumeric characters. It must be unique among all Cost Centres

A selector trigger button (or F2 key) linking to Cost Centre Selector is available.


Description

This is the Cost Centre description, an optional information of maximum 40 alphanumeric characters.

3.4.1 To Add a New Cost Centre

Minimum information required to add a Cost Centre is:

- Cost Centre identifier

Click on the  icon to launch the ADD window.

3.4.2 To Modify a Cost Centre

The information that can be modified, is:

- Cost Centre description

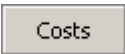
3.4.3 To Delete a Cost Centre

A Cost Centre cannot be deleted, if it is in use, i.e.:

- This Cost Centre is the default one
- There are equipments allocated to the Cost Centre
- There are Work Orders allocated to the Cost Centre
- There are Purchase Requests, Quotations, Purchase Orders or Invoices connected to this Cost Centre

Click on the  icon to delete the current Cost Centre.

3.4.4 To View Cost Analysis by Cost Centre

Click on the non-standard  button to view cost analysis by the specified cost centre.
(Details similar to that of Zone.)

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3.5 BUDGET CENTRE

Path: Maintenance / Reference Directories / Budget Centre

The *budget* represents the way of setting an upper limit for maintenance costs. The allocated budgets are defined in a 3x3-matrix, namely row-wise for planned, unplanned and other maintenance activities, and column-wise for labour resources, spares and miscellaneous. One or more cost centres may be attached to a budget and costs of these cost centres will be added and compared to the allocated budgets. The costs of the cost centres are those defined by the work orders already archived (made against the cost centres) and are maintained in the analysed years over the budget. Analysed years are provided for each budget over the years in the mandatory period. The analysed years determine the costs for each year in the mandatory period. A budget centre is used to group the costs from a number of cost centres, hence a budget centre without any cost centre attached has no meaning.

When new budget centres are created, void analysed years are added to them for all the years in the mandatory period and for up to date period.

The user has the facility to make a comparison between the allocated funds and the sum of the costs for all cost centres attached.

This module allows to allocate amounts on different cost centres and to follow their consumption. We allocate the cost centres to one or several budgets. It is possible to create or modify the budgets at any moment during the financial year.

Select from COSWIN menu *Maintenance / Reference Directories / Budget Centre* to launch the Budget Centre Details module.

The Budget Details window looks by default as follows:

Budget details

Budget Code : BGT1

Description : Budget 1

Costs | Cost Centres

Period: 2002 As on Date 03/12/2002

	Resource	Materials	Miscellaneous	Facility	Totals
Planned:	0.00	0.00	0.00	0.00	0.
	0.	0.	0.	0.	0.
Unplanned:	0.00	0.00	0.00	0.00	0.
	0.	0.	0.	0.	0.
Others:	0.00	0.00	0.00	0.00	0.
	0.	0.	0.	0.	0.
Totals:	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.

Detailed Field Descriptions:

Budget Code

This is the Budget identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Budget.

A selector trigger button (or F2 key) linking to Budget Selector is available.

Description

This is the Budget description, an optional information of maximum 40 alphanumeric characters.

BUDGET COST TAB:

This window displays the information concerning the Budgets versus Costs, to date.

Period

This is the Period (year) for which costs information is to be displayed, a mandatory information.

Resources

This information specifies the planned / unplanned / other resource costs, for the Budget's specified period, an optional positive numeric information.

Materials

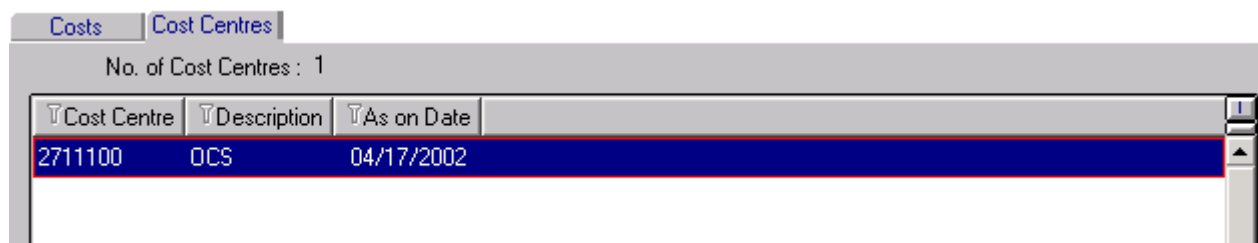
This information specifies the planned / unplanned / other material costs, for the Budget's specified period, an optional positive numeric information.

Miscellaneous

This information specifies planned / unplanned / other miscellaneous costs, for the Budget's specified period, an optional positive numeric information.

BUDGET COST CENTRES TAB:

The Cost Centres tab of Budget Details window looks by default as follows:



This tab displays the list of cost centres belonging to the budget centres. It allows attaching and detaching of cost centres to and from budget centres. A cost centre can be allocated to more than one budget centres.

Double click on any of the cost centre records will present the selected record in the **Budget Cost Centre Details** window.


Cost Centres List Box

Cost Centre	This is the Cost Centre's identifier.
Description	This is the Cost Centre's description.
Last Modified Date	This is the Cost Centre creation or last updating date.

3.5.1 To Add a New Budget Centre

Minimum information required to add a budget centre, is:

- Budget identifier
- Must have at least one Budget Cost Centre

Click on the  icon to launch the ADD window.

3.5.2 To Modify a Budget Centre

The information that can be modified, is:

- Budget description

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3.5.3 To Delete a Budget Centre

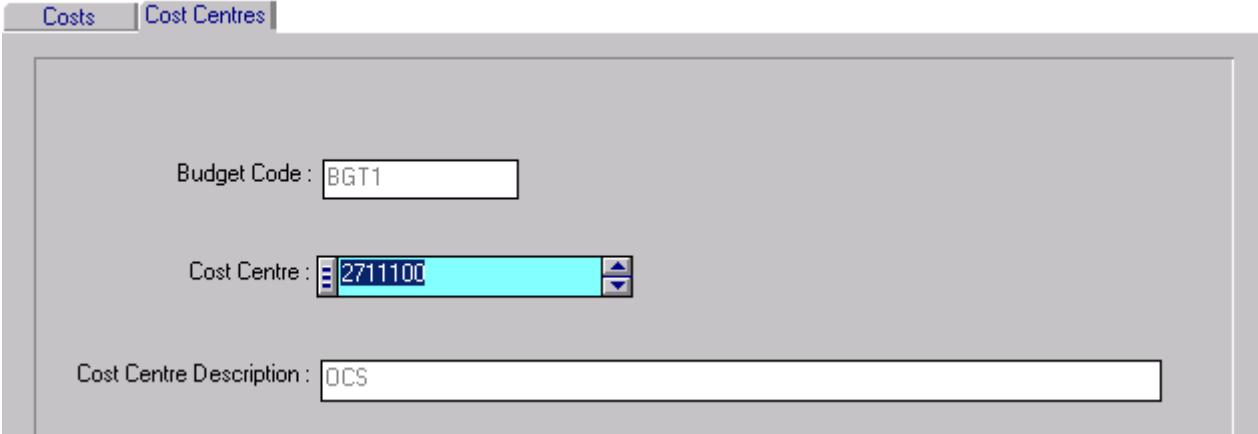
There are no restrictions on deleting Budget Centre.

Click on the  icon to delete the current Budget Centre.

3.5.4 Budget Cost Centre Details

This window displays the details information on a specified Cost Centre under a Budget.

The Budget Cost Centre Details window looks by default as follows:



Detailed Field Descriptions:

Budget Code

This is the Budget identifier, to which the Cost Centre belongs, a read-only information automatically managed by the system.

Cost

This is the Cost Centre identifier, a mandatory information that can take up to 16 alphanumeric characters. It must exist in the directory of Cost Centres, and it must be unique among the cost centres attached to a budget.

A selector trigger button (or F2 key) linking to Maintenance Cost Centre Selector is available.

Right-mouse click (or F7 key) will activate the Maintenance Cost Centre Details window for the current code.

Cost Centre Description


This is the Cost Centre description, a read-only information automatically managed by the system.

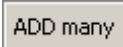
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3.5.4.1 To Add a Cost Centre to a Budget Centre

Minimum information required for adding a new cost centre:


- Cost centre code

Click onto the Cost Centre Tab of Budget Centre Detail window and then onto the  icon to launch the ADD window.

To add several cost centres to the budget centre at the same time, click on the non-standard  button.

3.5.4.2 To Delete a Cost Centre from a Budget Centre

The purchase budget cost centres can be deleted without restriction.

Click onto the Cost Centre Tab of Budget Centre Detail window and then onto the  icon to delete the current Cost Centre from the Budget Centre.

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3.6 MANUFACTURERS

Path: Maintenance / Reference Directories / Manufacturer

In order to have a good maintenance of equipment with complete technical details and supply of spare parts, it is necessary to maintain complete details of different manufacturers of the equipments.

The manufacturers reference directory specifies the details of the manufacturers of the equipments/spares.

Select from COSWIN menu *Maintenance / Reference Directories / Manufacturer* to launch the Manufacturer Details module.

The Manufacturer Details window looks by default as follows:

Detailed Field Descriptions:

Reference

This is the Manufacturer identifier, a mandatory information of maximum 20 alphanumeric characters. It must be unique among all Manufacturers.

A selector trigger button (or F2 key) linking to Manufacturer Selector is available.

Name

This is the Manufacturer Name, an optional information of maximum 40 alphanumeric characters.

Commercial Contact

This is the Commercial Contact person name, for the Manufacturer, an optional information of maximum 25 alphanumeric characters.

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Commercial Phone

This is the Phone number for the Commercial Contact person, an optional information of maximum 20 alphanumeric characters.

Commercial Fax

This is the Fax number for the Commercial Contact person, an optional information of maximum 20 alphanumeric characters.

Technical Contact

This is the technical contact person name, for the Manufacturer, an optional information of maximum 25 alphanumeric characters.

Technical Phone

This is the Phone number of the technical contact person, an optional information of maximum 20 alphanumeric characters.

Technical Fax

This is the Fax number of the technical contact person, an optional information of maximum 20 alphanumeric characters.

Address

This is the Manufacturer local address, an optional information. The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.


Other Information

This is an addition information, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.

3.6.1 To Add a New Manufacturer

Minimum information required to add a Manufacturer, is:

- Manufacturer identifier

Click on the  icon to launch the ADD window.

3.6.2 To Modify a Manufacturer

All the information can be modified, except the following:

- Manufacturer identifier

3.6.3 To Delete a Manufacturer

A Manufacturer cannot be deleted, if:

- There are Equipment Purchase Orders for this Manufacturer
- There are technical details for this Manufacturer in the Equipment Technical Specifications

Click on the  icon to delete the current Manufacturer.

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3.7 MAINTENANCE SUPPLIERS

Path: Maintenance / Reference Directories / Supplier

Different suppliers provide the various equipment/spares that are available in the plant. In order to have a good maintenance of equipment with technical details and supply of spare parts it is necessary to maintain complete details of different suppliers.

The supplier reference directory specifies the details of the suppliers providing the maintenance equipments/spares.

The Suppliers from the Maintenance Module is **DIFFERENT** from that of the Purchase Module. They are two different files and there is no connection between them. Thus, if a supplier provides both equipments as well as stock items then this supplier must be in both modules.

Select from COSWIN menu *Maintenance / Reference Directories / Supplier* to launch the Maintenance Supplier Details module.

The Maintenance Supplier Details window looks by default as follows:

The screenshot shows a software window titled "Maintenance Supplier Details". At the top, there's a "Reference" section with a dropdown menu set to "TICKET/ASCOM" and a text box containing "Ascom Asia Pacific Limited". Below this, the contact information is split into two columns. The left column has "Comm Contact" (MR CK GOH), "Phone" (299 5954), and "Fax" (299 5904). The right column has "Tech Contact" (empty), "Phone" (empty), and "Fax" (empty). A "Country" field is set to "SINGAPORE". The bottom section is divided into "Address" and "Other Information". The "Address" field contains "300 Beach Road #32-03 The Concourse Singapore 199555". The "Other Information" field is empty.

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Detailed Field Descriptions:

Reference

This is the Supplier identifier, a mandatory information of maximum 20 alphanumeric characters. It must be unique among all Maintenance Suppliers.

A selector trigger button (or F2 key) linking to Maintenance Supplier Selector is available.

Name

This is the Supplier Name, an optional information of maximum 40 alphanumeric characters.

Commercial Contact

This is the Commercial Contact person name, for the Supplier, an optional information of maximum 25 alphanumeric characters.

Commercial Phone

This is the Phone number for the Commercial Contact person, an optional information of maximum 20 alphanumeric characters.

Commercial Fax

This is the Fax number for the Commercial Contact person, an optional information of maximum 20 alphanumeric characters.

Technical Contact

This is the technical contact person name, for the supplier, an optional information of maximum 25 alphanumeric characters.

Technical Phone

This is the Phone number of the technical contact person, an optional information of maximum 20 alphanumeric characters.

Technical Fax

This is the Fax number of the technical contact person, an optional information of maximum 20 alphanumeric characters.

Address

This is the supplier local address, an optional information. The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.


Other Information

This is an addition Information, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.

3.7.1 To Add a New Supplier

Minimum information required to add a supplier, is:

- The Supplier identifier

Click on the  icon to launch the ADD window.

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3.7.2 To Modify a Supplier

All the information can be modified, except the following:

- The Supplier identifier

3.7.3 To Delete a Supplier

A Supplier cannot be deleted, if at least one of the following restrictions occurs:

- There are Equipment Purchase Orders for this Supplier
- There are technical details for this Supplier in the Equipment Technical Specifications

Click on the  icon to delete the current Supplier.

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3.8 SUBCONTRACTORS

Path: Maintenance / Reference Directories / Subcontractors

There may be some equipments existing in the plant being maintained by external contractors. For such situations, sub-contractors and contracts details need to be defined in the system.

The sub-contractors reference directory specifies the details of subcontractors contracted to perform maintenance jobs.

Select from COSWIN menu *Maintenance / Reference Directories / Subcontractors* to launch the Subcontractor Details module.

The Subcontractor Details window looks by default as follows:

The screenshot shows a window titled "Subcontractor Directory". It contains the following fields:

- Reference:** A dropdown menu showing "C756".
- Contractor:** A text field displaying "C756".
- Comm Contact:** A text field displaying "MR HO Y M".
- Tech Contact:** A text field displaying "Mr Chuah C S".
- Phone:** Two text fields, both displaying "267-1111" and "267-9999" respectively.
- Fax:** Two text fields, both displaying "261-5555" and "261-5555" respectively.
- Country:** A text field displaying "SINGAPORE".
- Address:** A text field displaying "31 Shipyard Road".
- Other Information:** A text field displaying "Nil".

Detailed Field Descriptions:

Reference

This is the Subcontractor identifier, a mandatory information of maximum 20 alphanumeric characters. It must be unique among all Sub-contractors.

A selector trigger button (or F2 key) linking to Sub-contractor Selector is available.

Name

This is the Subcontractor Name, an optional information of maximum 40 alphanumeric characters.

Commercial Contact

This is the Commercial Contact person name, for the Subcontractor, an optional information of maximum 25 alphanumeric characters.

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Commercial Phone

This is the Phone number for the Commercial Contact person, an optional information of maximum 20 alphanumeric characters.

Commercial Fax

This is the Fax number for the Commercial Contact person, an optional information of maximum 20 alphanumeric characters.

Technical Contact

This is the technical contact person name, for the Subcontractor, an optional information of maximum 25 alphanumeric characters.

Technical Phone

This is the Phone number of the technical contact person, an optional information of maximum 20 alphanumeric characters.

Technical Fax

This is the Fax number of the technical contact person, an optional information of maximum 20 alphanumeric characters.

Address

This is the subcontractor local address, an optional information. The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.


Other Information

This is an addition information, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.

3.8.1 To Add a New Sub-contractor

Minimum information required to add a subcontractor, is:

- The Subcontractor identifier

Click on the  icon to launch the ADD window.

3.8.2 To Modify a Sub-contractor

All the information can be modified, except the following:

- The Subcontractor identifier

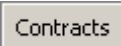
3.8.3 To Delete a Sub-contractor

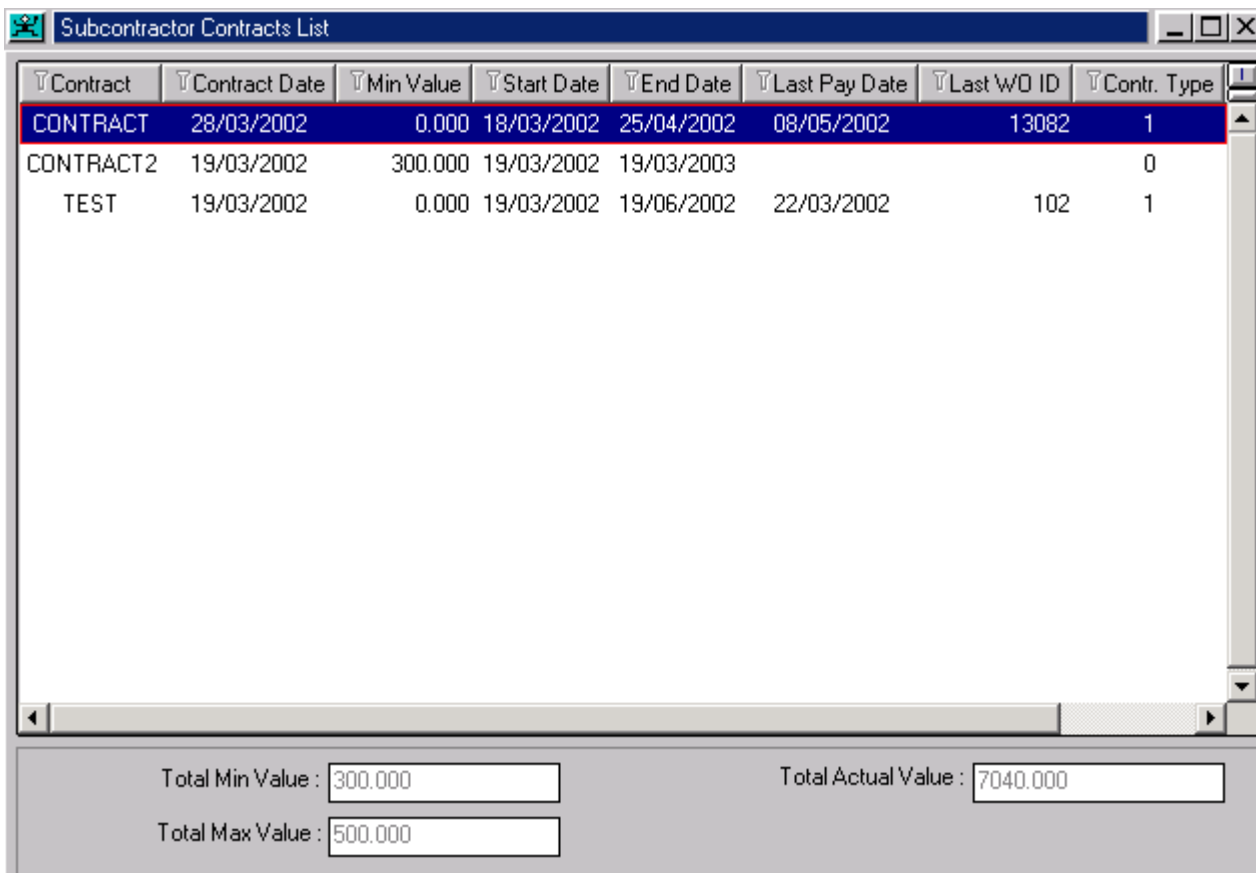
A Subcontractor cannot be deleted if:

- The subcontractor has contracts already attached to it

Click on the  icon to delete the current Sub-contractor.

3.8.4 To View List of Contracts under a Sub-contractor

Click on the non-standard  button and the list of contracts defined under the current sub-contractors will be displayed:



The screenshot shows a window titled "Subcontractor Contracts List". It contains a table with the following columns: Contract, Contract Date, Min Value, Start Date, End Date, Last Pay Date, Last WO ID, and Contr. Type. The table has three rows of data. Below the table, there are three input fields for summary statistics: Total Min Value (300.000), Total Actual Value (7040.000), and Total Max Value (500.000).

Contract	Contract Date	Min Value	Start Date	End Date	Last Pay Date	Last WO ID	Contr. Type
CONTRACT	28/03/2002	0.000	18/03/2002	25/04/2002	08/05/2002	13082	1
CONTRACT2	19/03/2002	300.000	19/03/2002	19/03/2003			0
TEST	19/03/2002	0.000	19/03/2002	19/06/2002	22/03/2002	102	1

Total Min Value : 300.000
Total Actual Value : 7040.000
Total Max Value : 500.000

The information displayed on this window is read-only and automatically managed by the system. Use the Contracts module to add, modify or delete a contract.

Double click on any of the Sub-contractor Contract list will present the selected record in the **Contract Details** window.

Detailed Field Descriptions:

Contracts List Box

Contract	This is the Contract identifier
Min. value	This is the Contract minimum value
Start date	This is the Contract start date
End date	This is the Contract end date
Last pay date	This is the date when the last payment was made for the Contract
Last WO ID	This is the Work Order that stands for the work fulfilled by the subcontractor, upon the current Contract

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Contract type	This is the type of the Contract (0-Open, 1-Yearly)
Contract status	This is the status of the Contract (0-Open, 1-Closed)
Contract date	This is the Contract creation date

Total min value

This is the cumulated minimum contract value of the Subcontractor's contracts, a read-only information automatically managed by the system.

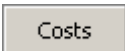
Total actual value

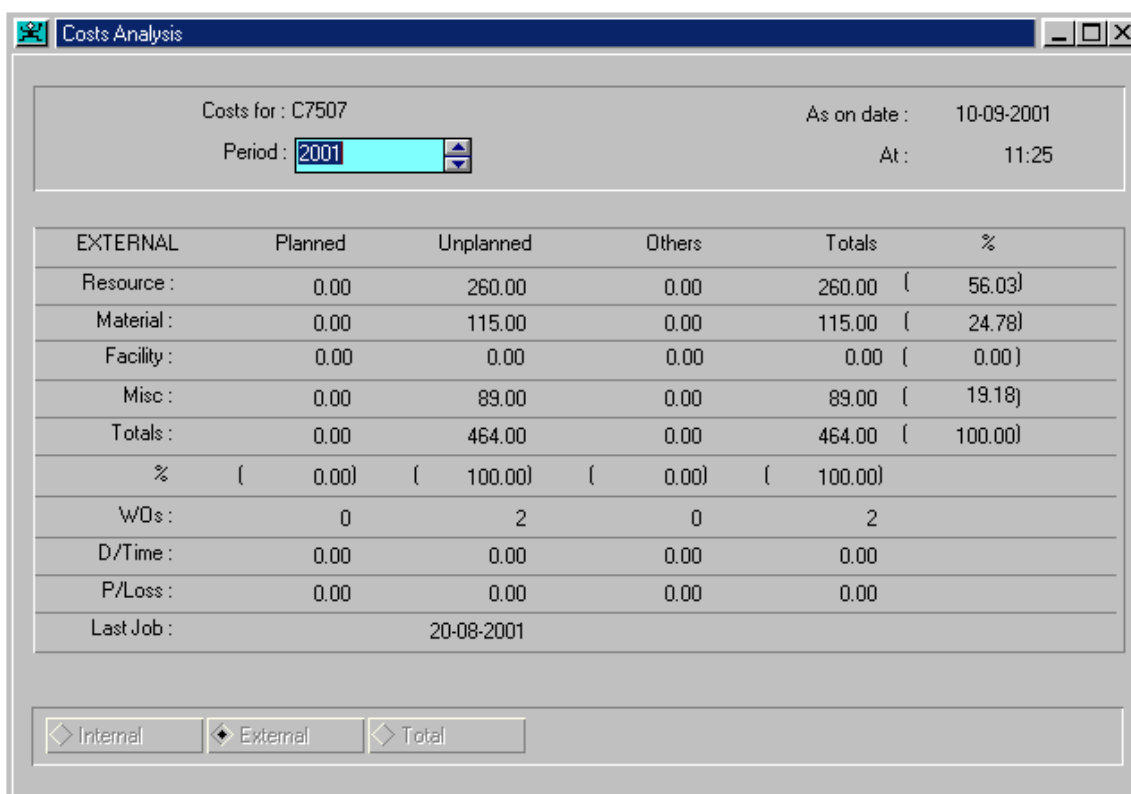
This is the cumulated actual contract value of the Subcontractor's contracts, a read-only information automatically managed by the system.

Total max value

This is the cumulated maximum contract value of the Subcontractor's contracts, a read-only information automatically managed by the system.

3.8.5 To View the Cost Analysis on a Sub-contractor

Click on the non-standard  button and cost analysis summary on this sub-contractor will be displayed:



The screenshot shows a window titled "Costs Analysis". Inside, there's a header section with "Costs for : C7507" and "As on date : 10-09-2001". Below this, a "Period" dropdown is set to "2001" and "At : 11:25". The main part of the window is a table with the following data:

EXTERNAL	Planned	Unplanned	Others	Totals	%
Resource :	0.00	260.00	0.00	260.00	(56.03)
Material :	0.00	115.00	0.00	115.00	(24.78)
Facility :	0.00	0.00	0.00	0.00	(0.00)
Misc :	0.00	89.00	0.00	89.00	(19.18)
Totals :	0.00	464.00	0.00	464.00	(100.00)
%	(0.00)	(100.00)	(0.00)	(100.00)	
WOs :	0	2	0	2	
D/Time :	0.00	0.00	0.00	0.00	
P/Loss :	0.00	0.00	0.00	0.00	
Last Job :	20-08-2001				

At the bottom of the window, there are three buttons: "Internal", "External" (which is selected), and "Total".

The information displayed is similar to those for zones and functions except that only external cost are available here.

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3.9 CONTRACTS

Path: Maintenance / Reference Directories / Contracts

As the maintenance jobs may be subcontracted out to external contractors, therefore arise the need to keep track of the *contract jobs* defined on various equipments.

The Contracts reference directory keeps track of all the contracts established by the user.

There are two types of Contract available:

- **Open Order** contracts, which refer to the orders that are opened for the whole period with small costs so no invoice will be received for them;
- **Yearly** contracts are defined for maintenance of a specific equipment where invoices may be added. Note that such invoices are not related to those in Purchase module.

Select from COSWIN menu *Maintenance / Reference Directories / Contracts* to launch the Contract Details module.

The Contract Details window looks by default as follows:

The screenshot shows the 'Contract Details' window with the following fields and values:

- Contract: CNT-2002 (selected from a list), Contract 2002 (text field)
- Subcontractor: MSUB-001 (selected from a list), Test NEZ (text field)
- Start Date: 01/01/2001, End Date: 12/31/2002
- Tabs: Details (selected), Costs, Comments, Jobs, Invoice
- Actual Value: 345.00
- Contract Status: 0 Open (selected from a dropdown)
- Contract Type: 1 Yearly (selected from a dropdown)
- Eqpt/Group Code: AFCALB17/GTDB01 (selected from a list), Eqpt Level: 2 (selected from a dropdown)
- Description: Drum Block for 5 Coin Types
- Values: Minimum: 0.00, Maximum: 0.00
- #W.O.: 2, Actual Hrs: 4.00

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Detailed Field Descriptions:

Contract

This is the Contract identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Contracts.

A selector trigger button (or F2 key) linking to Contract Selector is available.

Contract description

This is the Contract description, an optional information of maximum 40 alphanumeric characters.

Subcontractor

This is the Subcontractor identifier, a mandatory information of maximum 11 alphanumeric characters. It must exist in the directory of Subcontractors.

A selector trigger button (or F2 key) linking to Sub-contractor Selector is available.

Subcontractor description

This is the Subcontractor description, a read-only information automatically managed by the system.

Start Date

This is the date when the Contract starts, an optional information, automatically proposed as the current date.

End Date

This is the date when the contract must be finished, a mandatory information. It cannot be less than the Contract start date.

Actual value

This is the Contract Actual value, a read-only information automatically managed by the system. It is the sum of total maintenance cost of work orders issued under this contract. The WO maintenance cost will be updated to this information upon archival of work order.

Contract Status

This is the contract status, and it must be one of the following:

0 - an Opened contract

1 - a Closed contract

Contract Type

This is the contract type, and it must be one of the following:

0 - Open, for an opened order contract

1 - Yearly, for an yearly contract

Equipment/Group Code

This is the identifier of the Equipment/Group for which the contract is drawn. It must exist in the register of equipment or among the groups of equipment.

If the Contract type is 1 - Yearly, this is a compulsory information, otherwise it is an inaccessible information.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

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Eqpt Level

This is the Equipment Level, a read-only information automatically managed by the system.

Description

This is the Equipment description, a read-only information automatically managed by the system.

Minimum Value

This is the Minimum Contract value, an optional positive numeric information.

Maximum Value

This is the Maximum Contract value, an optional positive numeric information.

#W.O.

This is the number of archived Work Order issued against this contract, a read-only information automatically managed by the system.

Actual Hours

This is the Actual number of Hours worked against the Contract, a read-only information automatically managed by the system. It is the sum of the Actual Hours recorded in all the archived Work Orders issued against this contract.

COSTS TAB:

The Cost tab of Contract Details window looks by default as follows:

Period: 2001		As on date: 18-08-2001			
Internal		External		Totals	
TOTAL	Resource	Materials	Misc.	Facility	Totals
Planned :	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
UnPlanned :	0.00	0.00	0.00	0.00	0.00
	260.00	115.00	89.00	0.00	464.00
Others :	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
Totals :	0.00	0.00	0.00	0.00	0.00
	260.00	115.00	89.00	0.00	464.00

The purpose of this window is to provide information about budgeted versus actual costs of a Contract. For each selected period, the Budgets are displayed only if Total option of Cost Types radio-button is selected.

Detailed Field Descriptions:

Period

This is the Period (year) for which costs information is to be displayed, a mandatory information.

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Cost Types

This radio-button specifies the type of the Contract Costs to be displayed.

Internal	Internal Costs of the Contract are displayed
External	External Costs of the Contract are displayed
Totals	Total Costs of the Contract are displayed

Resources

This information specifies the planned / unplanned / other resource costs, for the Contract's specified period, an optional positive numeric information. If **Total** cost type radio-button is selected, then user is able to view and update the budgeted resource amount.

Materials

This information specifies the planned / unplanned / other material costs, for the Contract's specified period, an optional positive numeric information. If **Total** cost type radio-button is selected, then user is able to view and update the budgeted material amount.

Miscellaneous

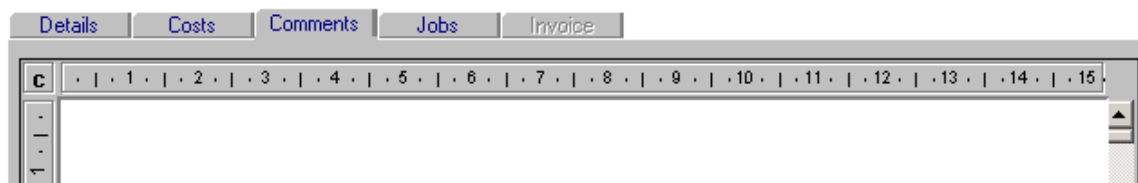
This information specifies planned / unplanned / other miscellaneous costs, for the Contract's specified period, an optional positive numeric information. If **Total** cost type radio-button is selected, then user is able to view and update the budgeted miscellaneous amount.

Facility

This information specifies planned / unplanned / other Facility costs, for the Contract's specified period, an optional positive numeric information. If **Total** cost type radio-button is selected, then user is able to view and update the budgeted Facility amount.

COMMENTS TAB:

The Comment tab of Contract Details window looks by default as follows:



The purpose of this window is to record notes regarding the contract.

The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.

JOB TAB:

The Jobs tab of Contract Details window looks by default as follows:

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Details	Costs	Comments	Jobs	Invoice		
T Eqpt/Group Code	T Job ID	T Job Description	T Zone	T Function	T Eqpt Level	T Eqpt Desc
AFCALB17/GTDB01	CLEANING	Cleaning	NEL	AFC/TICKET	2	Drum Block for 5 Coin Types
AFCALB17/GTCV01	CLEANING	Cleaning	NEL	AFC/TICKET	2	Coin Verifier RS20 SGD
AFCALB17/GTNA01	CLEANING	Cleaning	NEL	AFC/TICKET	2	Note Acceptor BNA572-401C-S

This tab displays the list of maintenance jobs being performed under this contract.

Equipment Job List Box

Eqpt/Group Code	This is the Equipment/Group identifier, for which the Job is defined on this Contract
Job ID	This is the Job identifier, defined on this Contract
Job Description	This is the Job description
Zone	This is the Equipment Zone identifier
Function	This is the Equipment Function identifier
Eqpt Level	This is the Equipment level in its structure
Eqpt Desc	This is the Equipment description
Category	This is the Equipment Category identifier
Cost Centre	This is the Equipment Cost Centre identifier
Parent Eqpt	This is the Equipment's Parent identifier in its structure (if any)
System Eqpt	This is the Equipment's System identifier in its structure
Item Code	This is the Equipment Item equivalence identifier
Bar Code	This is the Equipment Bar Code identifier
Last Modified Date	This is the Equipment's creation or last update date

INVOICE TAB:

The Invoice tab of Contract Details window looks by default as follows:

Details	Costs	Comments	Jobs	Invoice
T Invoice No.	T Invoice Date	Value	T Payment Date	T WO ID
REF	21/03/2002	1890.00	21/03/2002	113

This window displays all the existing invoices created for contract of type 1 - Yearly.


Double click on any of the invoice record will present the selected record in the **Contract's Invoice Details** window.

Invoice List Box

Invoice Date	This is the date of the invoice.
---------------------	----------------------------------

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Invoice No.	This is the invoice identifier.
Value	This is the invoice value.
Payment Date	This is the invoice payment date.
W.O ID	This is the Work Order identifier, for the work fulfilled by the subcontractor and paid through the current invoice.

NOTE: The **Invoice** tab and the  button will only be enabled if the contract is of type **1 Yearly**.

3.9.1 To Add a New Contract

Minimum information required to add a Contract, is:

- Contract identifier
- Subcontractor identifier
- Finish date
- Contract status
- Contract type
- Equipment/Group identifier, if Contract type is '1 – yearly'

Click on the  icon to launch the ADD window.

3.9.2 To Modify a Contract

The information that can be modified, is:

- Contract description
- Subcontractor identifier
- Contract start date
- Contract finish date
- Contract status
- Contract type
- Contract minimum value
- Contract maximum value

3.9.3 To Delete a Contract

A Contract cannot be deleted, if at least one of the following restrictions occurs:

- Cost information exists for the analysis period
- There are Work Orders for this contract
- The Contract status is not closed

Click on the  icon to delete the current Contract.

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3.9.4 Contract's Invoice Details

Under the Invoice Tab of Contract Details window, invoices may be added, modified or deleted from the Contract. Please note that contract invoices is not related to the Purchase Invoices in the Purchase module.

The Contract Invoice details window looks by default as follows:

The screenshot shows a software window titled 'Contract Invoice details'. At the top, there are five tabs: 'Details', 'Costs', 'Comments', 'Jobs', and 'Invoice', with 'Invoice' being the active tab. The main area contains several input fields and a section for 'Invoice Values'. The fields are: 'Contract No' (text box with 'CONTRACT'), 'Invoice Date' (calendar icon, date '21/03/2002'), 'Invoice No' (text box with 'REF' and a dropdown arrow), 'Payment Date' (calendar icon, date '21/03/2002'), and 'Generate WOs?' (checkbox). The 'Invoice Values' section includes: 'Resource Cost' (150.00), 'Material Cost' (990.00), 'Miscellaneous Cost' (450.00), and 'Facility Cost' (300.00).

Detailed Field Descriptions:

Contract No

This is the Contract identifier, for which the Invoice is made, a read-only information automatically managed by the system.

Invoice Date

This is the Invoice Date, an optional information which cannot be less than the current date. COSWIN automatically proposes the current date.

Invoice No

This is the Invoice identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique for the given contract.

Payment Date

This is the Invoice Payment Date. If a Work Order is to be created and paid through the invoice, then it is mandatory.

Generate Work Order?

If checked, a work order will be automatically created with status = '3 – Archival' upon saving of the invoice. This work order represents the work completed by the subcontractor under the current Contract. COSWIN will create the work order according to the default values specified in the Invoice Configuration.

As an Invoice cannot pay more than one Work Order, thus only one Work Order can be created from an Invoice.

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Resources Cost

This is the total manpower cost (labour cost) incurred against the Work Order created from the Invoice, an optional positive numeric information, whose default value is 0. This will be the work order labour cost if work order is generated from the invoice.

Materials Cost

This is the total material cost incurred against the Work Order created from the Invoice, an optional positive numeric information, whose default value is 0. This will be the work order material cost if work order is generated from the invoice.

Miscellaneous Cost

This is the total miscellaneous cost incurred against the Work Order created from the Invoice, an optional positive numeric information, whose default value is 0. This will be the work order miscellaneous cost if work order is generated from the invoice.

Facility Cost

This is the facility cost incurred against the Work Order created from the Invoice, an optional positive numeric information, whose default value is 0. This will be the work order facility cost if work order is generated from the invoice.


3.9.4.1 Add Invoices to Contracts (of type Yearly)

It is possible to add **invoices** (and creating WO with status 3 - Archivable) directly from the Contracts module. The necessary conditions are:

1. The contract must be of type **1 Yearly**.
2. The contract must not be closed (status = **0 open**).
3. The contract is defined for a piece of **equipment/group**.
4. A configuration for invoice must have been declared.

Minimum information required to add an Invoice for the Contract, is:

- Invoice identifier
- Invoice Payment Date, if a Work Order is to be paid through the Invoice

Click on the  icon to launch the ADD window.


3.9.4.2 To Modify an Invoice of a Contract

All the information can be modified, except:

- The Invoice identifier

3.9.4.3 To Delete an Invoice from a Contract

There are no restrictions in deleting Invoices from a Contract.

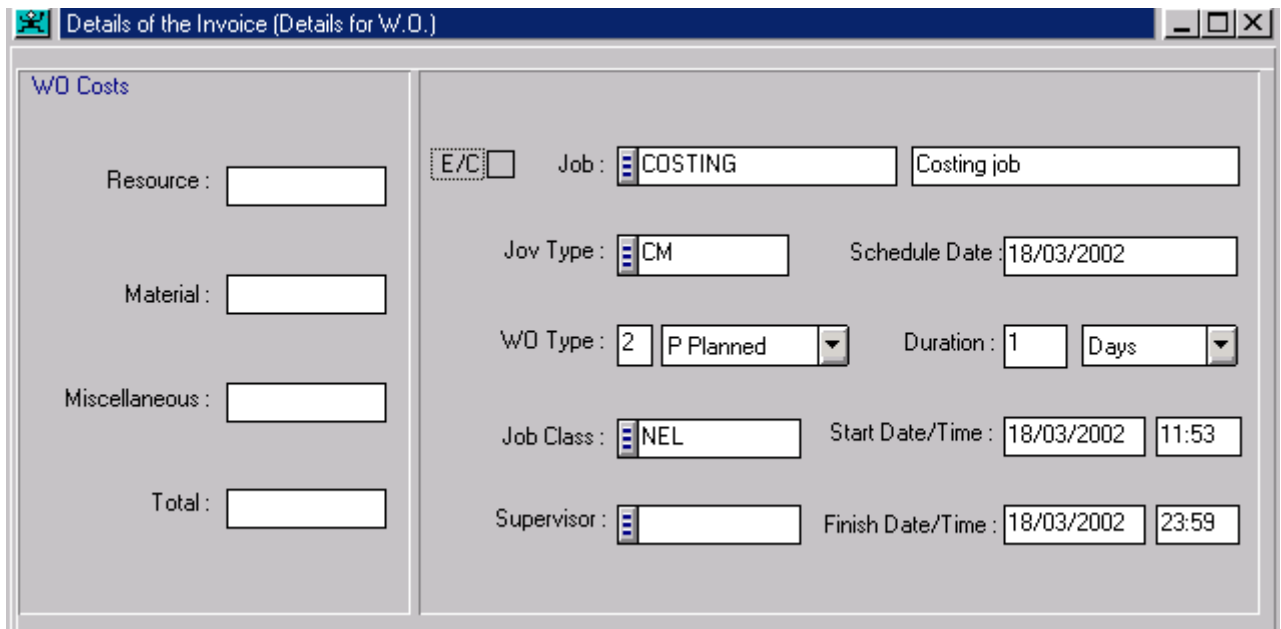
Click on the  icon to delete the current Invoice from the Contract.

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3.9.4.4 To Define Invoice Configuration for Contract

The purpose of this configuration window is to capture the default details necessary for the Work Orders created together with a invoice of a Contract having status "Open" and type "Yearly".

Click on the non-standard  button, and the following window appears:



Detailed Field Descriptions:

Resource

This is the total manpower cost (labour cost) incurred against the work order (from employee time usage feedback). It is a positive numeric value automatically managed by the system.

Materials

This is the total material cost incurred against the work order (from stock usage feedback and the issues against work order). It is a positive numeric value automatically computed by the system.

Miscellaneous

This is total miscellaneous cost incurred against the work order. It is a positive numeric value, automatically managed by the system.

Total

This information specifies the total costs that may have been incurred against the Work Order. It is a read-only information automatically managed by the system.

E/C

This checkbox specifies the job source for the work orders. If checked, jobs will be selected based on categories otherwise they will be selected based on equipment.

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Job

This is the Job identifier, an optional information of maximum 16 alphanumeric characters. It must be unique among the jobs of the given equipment and must be of behaviour **0 Just in**

Time.

If not specified, COSWIN automatically generates an unplanned Job identifier.

A selector trigger button (or F2 key) linking to Equipment Jobs Selector is available.

Right-mouse click (or F7 key) will activate the Job Guidelines Details window for the current code.

Job description

This is the Job description, a mandatory information of maximum 40 alphanumeric characters if the Job does not exist in the database. Otherwise it is a read-only information automatically managed by the system.

Job Type

This is the Job Type identifier, a mandatory information that can take up to 6 alphanumeric characters. It must exist in the database, in the directory of job types.

A selector trigger button (or F2 key) linking to Job Types Selector is available.

Schedule date

This is the Work Order Schedule date, an optional information. COSWIN automatically proposes the current date.

Work Order Cost Type

This is the Work Order cost type, an optional information (one digit) that can be 1 (internal) or 2 (external). If not specified, COSWIN automatically proposes type 2.

Work Order Type

This is the Work Order type, and it must be one of the following:

- P – Planned
- U – Unplanned
- O – Other

Duration

This is the Work Order Duration, an optional information. If not specified, COSWIN automatically proposes one day or one week, depending on the duration unit.

Duration Unit

This is the Work Order Duration Unit of measurement, and it can be one of the following:

- Days
- Weeks

Job Class

This is the Job Class identifier, an optional information of maximum 6 alphanumeric characters. It must exist in the directory of job classes. If not specified, COSWIN automatically proposes the default Job Class established in COSWIN Configuration's Maintenance / Default Codes.

A selector trigger button (or F2 key) linking to Job Classes Selector is available.

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Start Date

This is the Work Order start date, an optional information. If not specified, COSWIN automatically proposes the current date.

Start Time

This is the Work Order start time, an optional information. If not specified, COSWIN automatically proposes the current time.

Supervisor

This is the Work Order Supervisor identifier, an optional information of maximum 6 alphanumeric characters. It must exist in the directory of Supervisors.

A selector trigger button (or F2 key) linking to Supervisors Selector is available.

Right-mouse click (or F7 key) will activate the Supervisor Details window for the current code.

Finish Date

This is the Work Order Finish Date, an optional information, not less than Work Order Start Date. If not specified, COSWIN automatically proposes the current date.

Finish Time

This is the Work Order Finish Time, an optional information. If not specified, COSWIN automatically proposes 23:59.

3.10 DIAGNOSTIC CODES

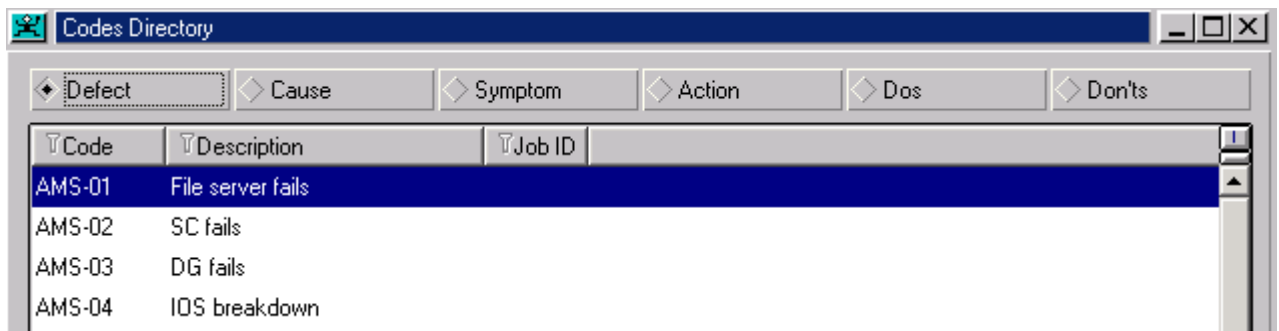
Path: Maintenance / Reference Directories / Codes

This module provides facilities to define the details for the following:

- Defect that deal with the nature of the breakdown
- Cause – probable cause of breakdowns
- Symptom of breakdowns
- Action – adopted to rectify the breakdowns
- Norms ("Dos") – in performing the maintenance jobs
- Restrictions ("Don'ts") – in performing the maintenance jobs

Select from COSWIN menu *Maintenance / Reference Directories / Codes* to launch the Code Directory module.

The Code Directory window looks by default as follows:



Click on one of the radio button of the code category and the corresponding list of defined codes will be shown.



Double click on any of the code record will present the selected record in the **Code Details** window.

The Code Details window looks by default as follows:

Detailed Field Descriptions:

Target Code

This radio-button specifies the target information to which the Code refers:

Defect	The Code is a Defect Code.
Cause	The Code is a Cause Code.
Symptom	The Code is a Symptom Code.
Action	The Code is an Action Code.
Dos	The Code is a Norm Code.
Don'ts	The Code is a Restriction Code.

Code

This is the Code identifier, a mandatory information of maximum 9 alphanumeric characters. It must be unique among the target type of Codes.

A selector trigger button (or F2 key) linking to Code Directory Selector is available.

Description


This is the Code description, a mandatory information of maximum 40 alphanumeric characters.

Job ID

This is the job identifier, which is enabled only under "Action" category of the code.

3.10.1 To Add a New Code

All the information in the creation window is required to add a new Code.

Click on the  icon to launch the ADD window.

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3.10.2 To Modify a Code

The only information that can be modified, is:

- Code description

3.10.3 To Delete a Code

A Code cannot be deleted, if it is already in use, i.e. exists a Defect / Cause / Symptom / Action / Do / Don't record that actually uses this Code.

Click on the  icon to delete the current Code.

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3.11 SPARES AND TOOLS

Path: Maintenance / Reference Directories / Spare/Tools

This module defines the spares and tools but are used in maintenance process are not managed by the Stock and Purchase Module. Such spares and tools can be allocated to a work order without an issue from store.

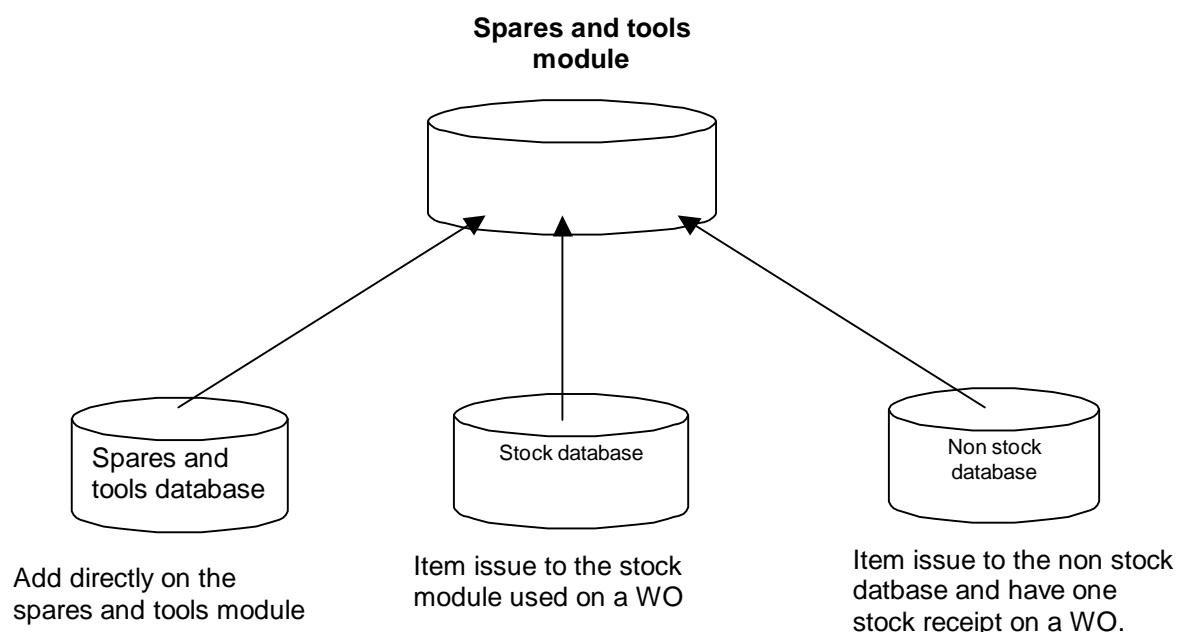
The information defined here is used to

- Define the list of spares for equipment
- Compute the cost of the maintenance jobs.

The *Spares/Tools* reference directory keeps track of the details of the spares and tools. A *Spare/Tool* is identified by a unique item code. It gives the details such as description of an item, group to which it belongs, cost per unit of an item, and identification of the item (spare or tool).

This module allows to add the complete list of spares and tools that are not referenced to in the Stock module and also to manage the “Stock articles” which have already been used in a WO.

The articles found in this module can have several origins:



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Select from COSWIN menu *Maintenance / Reference Directories / Spare/Tools* to launch the Spare/Tools Details module.

The Spare/Tools Details window looks by default as follows:

Detailed Field Descriptions:

Item Code

This is the Item identifier, a mandatory information of maximum 20 alphanumeric characters. It must be unique among all spares/tools items.

A selector trigger button (or F2 key) linking to Spare/Tools Selector is available.

Item description

This is the Item description, an optional information of maximum 100 alphanumeric characters.

Group

This is the identifier of the Group to which the spare or tool belongs, an optional information of maximum 10 alphanumeric characters.

Units

This is the measurement Unit identifier, for the spare/tool, an optional information of maximum 6 alphanumeric characters.

Unit Cost

This is the item's Cost Per Unit, a mandatory positive numeric information. When this unit cost is modified, COSWIN will prompt whether to update all equipment jobs in Job Guidelines that use this spare/tool with the new rate.

Spare / Tool Type

This information specifies the type of the item. It must be one of the following:


- 0 – Spare
- 1 – Tool
- 2 – Repairable

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3.11.1 To Add a New Spare/Tool Item

Minimum information required to add a Spare / Tool item, is:

- Spare Tool identifier
- Cost Per Unit
- Item type

Click on the  icon to launch the ADD window.

3.11.2 To Modify a Spare/Tool Item

All the Spare / Tool information can be modified, except:

- The Spare / Tool identifier

The user has the choice to update all the material costs for the maintenance Jobs that actually use the modified item.

3.11.3 To Delete a Spare/Tool Item

A Spare / Tool item cannot be deleted, if it is being used by a Job.

Click on the  icon to delete the current Spare/Tool item.

3.11.4 To Reconcile Item Cost with Stock Module

When stock items are used for defining the stock requirement of a maintenance job, the cost figures of the item, as applicable at that time, are taken into consideration for calculating the material and total job costs. However, the cost of the stock item may vary with time.

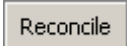
Stock module always maintains the latest cost details of stock item as the item costs are updated by the various stores transactions like Issues, Receipts etc. Whereas the cost in Spare/Tools becomes obsolete. Reconcile option goes through all items used by maintenance jobs, re-computes their material and total job costs and updates them. This job cost reflects the cost incurred in doing the job and taking into account the new material costs.

For each item (Spare/Tool), the Reconcile procedure takes into account the group to which this item belongs, i.e. the manner in which the new price must be calculated. Thus, there are five different ways to calculate this price, according to the five different methods:

- LIFO
- FIFO
- Moving average
- Standard price
- Last price

Reconciliation is a batch process, which goes through all items used by the maintenance module.

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When we click on the non-standard  button, COSWIN examines the stock articles used in the maintenance jobs and updates the costs of spares with that from the respective stock item in the Stock module and the unit price in the stock. The computation of **jobs cost** is updated, as well as the **list of spares** allocated to the equipment.

NOTE:

- The reconciliation process only processes the **Stock Items**. The Non-Stock items are not taken into account.
- For those work orders still in the Work in Progress, their allocated spares/tools will not be updated by reconciliation process.
- This may take a long time to process if the database contains a large number of jobs.

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3.12 CATEGORY

Path: Maintenance / Reference Directories / Category

The *category* is used to identify and categorise similar equipment instances together. For example, the user can define all motors in the plant under one category, «MOTOR».

Categories could be effectively used during job definition, defect analysis and report generation. COSWIN internally builds and maintains a library of jobs for each category of equipment instances. When the user defines jobs for equipment, these jobs are automatically added to the library of jobs for the category of the equipment. In this manner, when defining jobs for new equipment instances, the user can get help from the system to obtain a list of jobs that are applicable to the equipment based on its category.

Similarly, COSWIN also builds and maintains a library of defect, symptom, cause and action codes applicable to each category of equipment.

Although there is no costs chart attached to the CATEGORY window, this module is essential in the COSWIN database.

A piece of equipment can only be attached to a single category. A category can include more than one piece of equipment.

Select from COSWIN menu *Maintenance / Reference Directories / Category* to launch the Category Details module.

The Category Details window looks by default as follows:

Category : 1.5KVS/G

Description : 1500Vdc Switchgear

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Detailed Field Descriptions:

Category

This is the Category identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique.


A selector trigger button (or F2 key) linking to Category Selector is available.

Description

This is the Category description, a mandatory information of maximum 40 alphanumeric characters.

3.12.1 To Add a New Category

All the information in the module is mandatory.

Click on the  icon to launch the ADD window.

3.12.2 To Modify a Category

The information that can be modified, is:

- Category description

3.12.3 To Delete a Category

A Category cannot be deleted, if it is in use (there are equipment instances / jobs / defects belonging to the Category) or if it is the default Category specified in COSWIN parameters.

Click on the  icon to delete the current Company Type.

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3.13 ACTION KINDS

Path: Maintenance / Reference Directories / Action Kinds

The purpose of this module is to provide a classification for the types of Actions. Several Action types can, and must be categorised into a specified *Action Kind*. It is mandatory for an Action to belong to a single Action Kind. The purpose of this window is to provide details on the Action Kinds, and to permit the user to create new ones.

Select from COSWIN menu *Maintenance / Reference Directories / Action Kinds* to launch the Action Kinds Details module.

The Actions Kinds window looks by default as follows:

Detailed Field Descriptions:

Kind

This is the Action Kind identifier, a mandatory information of maximum 6 alphanumeric characters. It must be unique among all Action Kinds.


A selector trigger button (or F2 key) linking to Action Kinds Selector is available.

Description

This is the Action Kind description, a mandatory information of maximum 20 alphanumeric characters.

3.13.1 To Add a New Action Kind

All the information in this window is mandatory.

Click on the  icon to launch the ADD window.

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3.13.2 To Modify an Action Kind

The only information that can be modified is the Action Kind description.

3.13.3 To Delete an Action Kind

An Action Kind cannot be deleted if it is in use, i.e. there is an actual Action type belonging to that Action Kind.

Click on the  icon to delete the current Action Kind.

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3.14 ACTIONS

Path: Maintenance / Reference Directories / Actions

Actions are subdivisions of the Jobs or Work Orders, i.e. a collection of more specific operations that perform upon a sub-equipment of the Job/Work Order equipment, or, even upon an element of the sub-equipment. They are much like Jobs/Work Orders, but are usually shorter and their behaviour falls under the Work Order's general directions and specifications. Refer to the Job Guidelines module or Work Order Details module for their usage.

Select from COSWIN menu *Maintenance / Reference Directories / Actions* to launch the Action Directory module.

The Actions Directory window looks by default as follows:

Detailed Field Descriptions:

Action

This is the Action identifier, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Actions.

A selector trigger button (or F2 key) linking to Actions Selector is available.

Action description

This is the Action description, a mandatory information of maximum 60 alphanumeric characters.

Action Kind

This is the Action Kind identifier, a mandatory information of maximum 6 alphanumeric characters. It must exist in the directory of Action Kinds.

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A selector trigger button (or F2 key) linking to Action Kinds Selector is available.

Right-mouse click (or F7 key) will activate the Action Kind Details window for the current code.

Action Kind Description

This is the Action Kind description, a read-only information automatically managed by the system.

Element

This is the description of the element on the equipment that the action will be performed upon. It is an optional information of maximum 40 alphanumeric characters.

Equipment Status

This is the user-defined status of the equipment. It is an optional information that must exist in the directory of Equipment Status.

Device

This is the name of the device involved when the action will be performed upon. It is an optional information of maximum 20 alphanumeric characters.

Operation Type

This is the user-assigned operation type to the action. It is an optional information of maximum 10 alphanumeric characters.


Basic Duration

This is the estimated duration in hours for carrying out the action. It is an optional numeric information.

3.14.1 To Add a New Action

Minimum information required to add an Action entity, is:

- Action identifier
- Action description
- Action Kind

Click on the  icon to launch the ADD window.

3.14.2 To Modify an Action

The information that can be modified, is:

- Action description
- Action Kind

3.14.3 To Delete an Action

An Action entity cannot be deleted, if the Action has already been used in the Maintenance activity.

Click on the  icon to delete the current Action.

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3.15 JOBS

Path: Maintenance / Reference Directories / Jobs

The *Job Directory* provides a template for the actual Job instances for Job Guidelines module, which, in turn, will provide a template for the Work Orders. Therefore, the Job Directory is the ultimate abstraction of an actual Work Order. It has no equipment attached, but the information maintained here will be further used to update the Job instances (defined in Job Guidelines).

The most important piece of information defined here is the **Job Structure**. A Job Structure is a list of Jobs, beginning with a root Job, called the *system* Job, and continuing with up to 7 Jobs. Each Job is the parent for the successor Job and child of its preceding Job. Each job is only allowed 1 child job, and the parent job will have a longer job interval than the child job according to the Multiplicity defined.

The Job list structure is subject to the following restrictions:

- All the Jobs in the list must be distinct
- The list must not have loops (that is, the system Job must not have a parent **and** each Job must have at most one parent)

The **Job Structures** rely on the following vital information:

Multiplicity - This field specifies, for each parent Job, the number of child Job instance executions, after which the parent Job instance must be executed.

Critical Parent flag - This flag specifies whether the parent Job schedule will be modified according to the child Job schedule. If **Critical Parent** option is selected, then the parent Job schedule will not be modified.

Calendar flag - this flag specifies if one of the following calendar information will take part in the duration calculus, for the duration between two Job instances occurrences: equipment calendar, parent equipment calendar, system equipment calendar, group calendar, function calendar, zone calendar or plant calendar, the one of them which is defined first, in the given order. The holidays, shutdown periods, etc. will be taken into account for the duration calculation.

All the Jobs belonging to a structure must have the same calendar flags and critical parent flags as the system Job.

For a Job template, the Action List, Manpower Requirement List and Stock Requirement List are extracted from the first Job instance occurrence and are read-only information.

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Select from COSWIN menu *Maintenance / Reference Directories / Jobs* to launch the Job Directory module.

The Job Directory window looks by default as follows:

The screenshot shows the 'Job Directory' window. At the top, there's a title bar with a small icon and the text 'Job Directory'. Below the title bar, there are several input fields and a checkbox. The 'Job ID' field has a dropdown menu showing 'COMMS /ALARM' and a text box containing 'Alarm Inspection'. The 'Job Type' field has a dropdown menu showing 'PM' and a text box containing 'Preventive Maint'. The 'Job Behaviour' field has a dropdown menu showing '1. Start date'. Below these fields is a checkbox labeled 'Take into account working days only'. Below the input fields is a row of tabs: 'Details', 'Job Activ.', 'Res. Req.', 'Stock Req.', 'Actions', 'Categories', and 'Equipment'. The 'Details' tab is selected. Below the tabs, there are several input fields: 'Child Job ID' with a dropdown menu, 'Description' with a text box, 'Multiplicity' with a text box containing '0', a checkbox labeled 'Critical Parents', 'Parent Job ID' with a text box, and 'Description' with a text box.

Detailed Field Descriptions:

Job ID

This is the Job identifier, a mandatory information of maximum 16 alphanumeric characters. It must be unique among all Jobs.

A selector trigger button (or F2 key) linking to Jobs Directory Selector is available.

Job description

This is the Job description, a mandatory information of maximum 40 alphanumeric characters.

Job Type

This is the Job Type identifier, a mandatory information of maximum 6 alphanumeric characters. It must exist in the directory of Job Types.

A selector trigger button (or F2 key) linking to Job Types Selector is available.

Job Type description

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This is the Job Type description, a read-only information automatically managed by the system.

Job Behaviour

This information specifies the Job behaviour. It is a mandatory information and it can be one of the following:

- 0 – Just in time
- 1 – Started date
- 2 – Finished date
- 3 – Fixed interval
- 4 – Shutdown
- 5 – Regular

See Job Guidelines module for details on the detailed explanation on each behaviour.

Take into account working days only

If checked, the calendar will be reference when calculating Job's duration. This check box is enabled only if the Job behaviour is of type 1 or 2.

Child Job ID

This is the Child Job identifier, in the Job structure, an optional information of maximum 16 alphanumeric characters. It must exist in the directory of Jobs and must not be an ancestor for the current Job. Its purpose is to define a structure for the current Job. The child job must have the same behaviour as the parent job.

Child Job description

This is the Child Job description, a read-only information automatically managed by the system.

Multiplicity

This field, a mandatory positive integer, indicates, the number of child Job instance executions, after which this current Job instance (parent job) must be executed. COSWIN automatically proposes a default value of 2 if a Child Job is specified.

If no child job is specified, this field is read-only and will have a value of 0.

When this field is modified, COSWIN will prompt whether to update the related equipment jobs in Job Guidelines accordingly. If update option is selected, the current job's job interval in the Job Guideline will be re-computed according to the multiplicity specified and the child job's job interval, as

$$MU * INTV$$

Where MU = current job's multiplicity

INTV = child job's job interval in Job Guideline

Critical Parents

This flag specifies whether the parent Job schedule will be modified according to the child Job schedule. If checked, then the parent Job schedule will not be modified.

It is enabled only if Child Job was specified.

Parent Job ID

This is the Parent Job identifier, a read-only information automatically managed by the system.

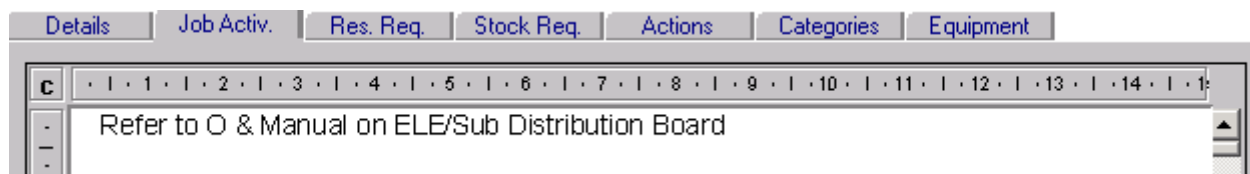
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Parent Job description

This is the Parent Job description, a read-only information automatically managed by the system.

JOB ACTIVITY TAB:

The Job Activity tab of Job Directory window looks by default as follows:



The purpose of this window is to provide notes and other specific activities for the Job template.

The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.

MANPOWER (RESOURCE) REQUIREMENT TAB:

The Manpower Requirement tab of Job Directory window looks by default as follows:

Details Job Activ. Res. Req. Stock Req. Actions Categories Equipment				
Resource	Name	Reqd No	Plan Hrs	
COM-STO	COMMS Snr Tech Officer	1	3.00	

This selector displays the list of Resources requirement from the first equipment job created from this job template. It is a read-only information automatically managed by the system.

Resource Requirement List Box

Resource	This is the identifier of the resource.
Name	This is the name (description) of the resource.
Required Number	This is the required number of this kind of resources for the Job or for the Job's Action.
Planned Hours	This is the resource's number of hours planned for the Job on which the Job is done.

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STOCK REQUIREMENT TAB:

The Stock Requirement tab of Job Directory window looks by default as follows:

Details	Job Activ.	Res. Req.	Stock Req.	Actions	Categories	Equipment
Item Code	Description	Request Qty	Replace Flg	Plan Days		
ELEHV/ELE/AG/08	Back Panel for MBCC	2.00	0	0		

This selector displays the list of Stock requirement from the first equipment job created from this job template. It is a read-only information automatically managed by the system.

Stock Requirement List Box

Item Code	This is the identifier of the item.
Description	This is the description of the item.
Request Quantity	The required quantity of the stock item.
Sequence No.	If the item is allocated for a Job's Action, this information specifies the sequence number of the Action in the Job's list of Actions; otherwise is 0.
Replacement Flag	This column specifies if the item is used systematically (0) or depending on certain constraints (1).
Planned Days	The number of days the stock item is necessary for the Job.

ACTIONS TAB:

The Action tab of Job Directory window looks by default as follows:

Details	Job Activ.	Res. Req.	Stock Req.	Actions	Categories	Equipment
Seq No	Sub Equipment	Sub Eqp. Description	Action Code	Action Description	Element	
1	AFCALB17/GTCI01	Top LED Customer Information	CHK001	Check n Inspect		

This selector displays the list of actions defined in the first equipment job created from this job template. It is a read-only information automatically managed by the system.

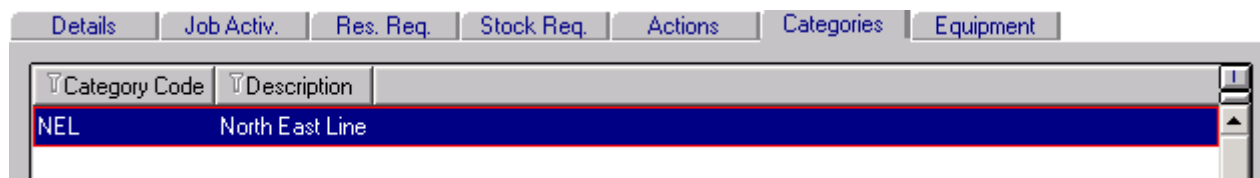
Action List Box

Sequence No	This is the sequence number of the Action in the Job's list of Actions
Sub Equipment Code	This is the identifier of the equipment for which the Action was generated
Sub Equipment Description	This is the description of the equipment for which the Action was generated
Action Code	This is the identifier of the Action

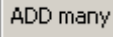
Action Description	This is the description of the Action
Element	This is the description of the specific element in the equipment upon which the Action activates

CATEGORIES TAB:

The Category tab of Job Directory window looks by default as follows:



This selector displays the list of categories that the Job template belongs to. It is possible for a Job template to have many categories as it can signify different things in different contexts.

Use the non-standard  button to add categories to a Job template from the Categories Selector.

The assigned category can be un-assigned from the Job template without restriction.

Category List Box

Category Code	This is the Job category identifier
Description	This is the Job category description

EQUIPMENT TAB:

The Equipment tab of Job Directory window looks by default as follows:



This selector displays the list of equipment or equipment group that have current Job as equipment job defined with in Job Guidelines module.

Equipment List Box

Eqpt Code	This is the identifier of the equipment or equipment group.
Description	This is the description of the equipment/equipment group.
Bar Code	This is the bar code of the equipment/equipment group.
Zone	This is the equipment zone identifier.
Function	This is the function of the equipment/equipment group.


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Cost Centre	This is the equipment's cost centre identifier.
Category	This is the equipment category identifier, indicating the technical family to which the equipment belongs.
Priority	This is the equipment priority (for planning purposes), an optional numeric information (one digit: 0...9, with 9 being the lowest priority).
Eqpt Level	This is the equipment level identifier, indicating the level at which the equipment is located within the equipment structure.
Location	This is the identifier of equipment's location in the Zone.
Main User	This is the identifier of equipment's location in the Zone.
Eqpt Type	This is the type of the equipment.
Parent Eqpt	This is the parent equipment of the equipment. That is, the current equipment is a sub-equipment of its parent equipment.
System Eqpt	This is the identifier of the system equipment for the current equipment. System equipment refers to the equipment at top of equipment structure.
Group	"E" denotes this record is an equipment; "G" denotes this record is an equipment group;
Item Code	This is the stock item that is equivalent to the equipment.
Geographical	This field defines which geographical equipment the current technical equipment depends on.
Authority	This is the company entity under which the equipment belongs.

3.15.1 To Add a New Job

Minimum information required to add a Job template, is:

- Job identifier (Code)
- Job description
- Job Type
- Job Behaviour

Click on the  icon to launch the ADD window.

3.15.2 To Modify a Job

All the information can be modified, except:

- Job identifier
- Parent Job identifier and description


Whenever the Child Job, Multiplicity or the Critical Parent field is modified, COSWIN will prompt whether to update the related Job Guidelines.

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3.15.3 To Delete a Job

A Job template cannot be deleted, if at least one of the following conditions occurs:

- The Job is within a Job structure
- The Job template has actual Job instances defined upon it (in Job Guidelines)

Click on the  icon to delete the current Job.

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3.16 PRIORITY OF WORK

Path: Maintenance / Reference Directories / Priority

The module is used to manage the different codes used to identify the priority of equipment jobs, job requests and planned jobs.

It is used to categorize the jobs, requests for work and planned jobs and the work to be done in view of their urgencies.

The priority of work defined for the equipment job, job request or planned job is copied to the respective work order released.

Select from COSWIN menu *Maintenance / Reference Directories / Priority* to launch the Priority Details module.

The Priority Details window looks by default as follows:

Detailed Field Descriptions:

Priority Code

This is the Priority code, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Priority of Work.

A selector trigger button (or F2 key) linking to Priority Selector is available.

Priority description

This is the Priority description, a mandatory information of maximum 40 alphanumeric characters.

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Info

This information provides supplementary text to the Priority of Work, an optional information of maximum 20 alphanumeric characters.

3.16.1 To Add a New Priority of Work

Minimum information required to add a Job template, is:

- Priority Code
- Priority description

Click on the  icon to launch the ADD window.

3.16.2 To Modify a Priority of Work

All the information can be modified, except:

- Priority Code

3.16.3 To Delete a Priority of Work

A Priority of Work cannot be deleted, if it has already been used in work orders, equipment jobs, job requests or planned jobs.

Click on the  icon to delete the current Priority.

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3.17 REQUEST BY

Path: Maintenance / Reference Directories / Request By

The module is used to manage the different persons that can raise requests for jobs (job requests). The work requester defined in the job request is copied to the work order released for the job request.

Select from COSWIN menu *Maintenance / Reference Directories / Request By* to launch the Request By Details module.

The Request By Details window looks by default as follows:

The screenshot shows a software window titled "Request By Details". It contains a "Requestor Code" field with a dropdown menu currently showing "P5" and a text box next to it containing "INF Mgr PRM". Below these are four input fields labeled "Phone:", "Info1:", "Info2:", and "Info3:", each with a corresponding text box.

Detailed Field Descriptions:

Requester Code

This is the Requester code, a mandatory information of maximum 20 alphanumeric characters. It must be unique among all Requestors.

A selector trigger button (or F2 key) linking to Request By Selector is available.

Requester description

This is the Requester description, a mandatory information of maximum 40 alphanumeric characters.

Phone

This is the requester's phone number, an optional information of maximum 15 alphanumeric characters.

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Info1

The following three information fields provide supplementary text data about the Requester. This is the first of them, an optional information of maximum 20 alphanumeric characters.

Info2

This is the second of them, an optional decimal number.


Info3

This is the third of them, an optional integer number.

3.17.1 To Add a New Work Requester

Minimum information required to add a Work Requester, is:

- Requester Code
- Requester description

Click on the  icon to launch the ADD window.

3.17.2 To Modify a Work Requester

All the information can be modified, except:

- Requester Code

3.17.3 To Delete a Work Requester

A Work Requester cannot be deleted, if it has already been used to raise job-requests.

Click on the  icon to delete the current Requestor.

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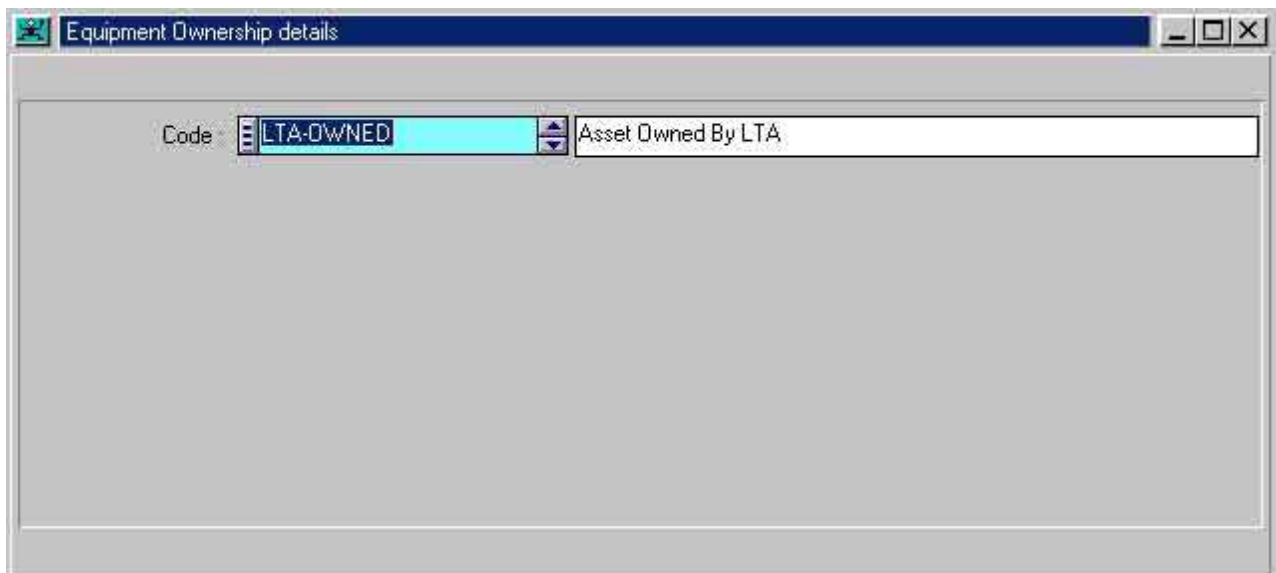
3.18 EQUIPMENT OWNERSHIP DETAILS

Path: *Free / Module 1*

This module is used to define the owner of the equipment that is provided as an optional detail during the acquisition of the equipment. Refer to section 4.13 on Financial Purchase Order.

Select from COSWIN menu *Free / Module 1* to launch the Equipment Ownership Details module.

The Equipment Ownership Details window looks by default as follows:



Detailed Field Descriptions:

Ownership Code

This is the Ownership code, a mandatory information of maximum 16 alphanumeric characters. It must be unique among all ownerships.

A selector trigger button (or F2 key) linking to Equipment Ownership Selector is available.

Ownership Code Description


This is the Ownership description, a mandatory information of maximum 40 alphanumeric characters.

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3.18.1 To Add a New Ownership

Minimum information required to add a Ownership, is:

- Ownership Code
- Ownership description

Click on the  icon to launch the ADD window.

3.18.2 To Modify a Ownership

All the information can be modified, except:

- Ownership Code

3.18.3 To Delete a Ownership

Click on the  icon to delete the current Ownership.

3.19 EQUIPMENT LOCATION DETAILS

Path: *Free / Module 3*

This module is used to define the location of the equipment that is provided as an optional detail during the definition of an equipment.

Select from COSWIN menu *Free / Module 3* to launch the Equipment Location Details module.

The Equipment Location Details window looks by default as follows:

Detailed Field Descriptions:

Equipment Location Code

This is the Location code, a mandatory information of maximum 16 alphanumeric characters. It must be unique among all locations.

A selector trigger button (or F2 key) linking to Equipment Ownership Selector is available.

Location Description

This is the Location description, a mandatory information of maximum 40 alphanumeric characters.

Associated Card Reader Asset ID


This is Asset ID of the card reader installed at the location, a mandatory information of maximum 20 alphanumeric characters.

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3.19.1 To Add a New Location

Minimum information required to add a Location, is:

- Location Code
- Location description
- Card Reader Asset ID

Click on the  icon to launch the ADD window.

3.19.2 To Modify a Location

All the information can be modified, except:

- Location Code

3.19.3 To Delete a Location

Click on the  icon to delete the current Location.

4. EQUIPMENT REGISTER

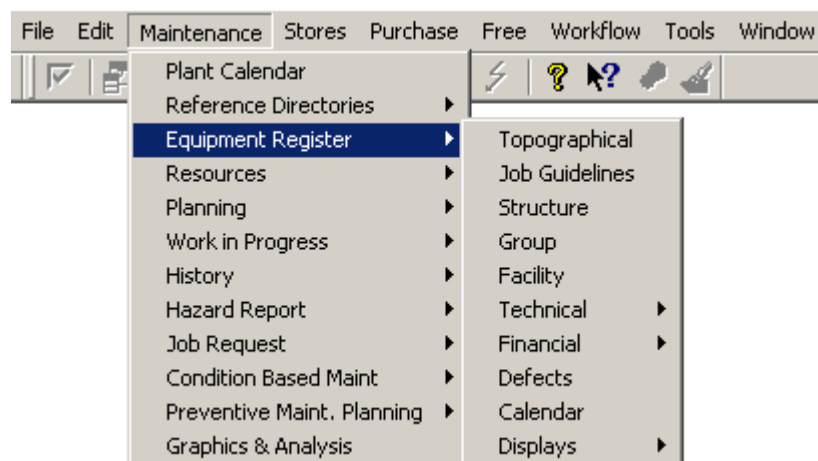
In COSWIN, an equipment (also known as an Asset) is an object that can be the subject of a maintenance operation.

It can be an electrical, or a mechanical machine or even an geographical object used for production activities or for any correlated activities.

Any equipment must be placed in a zone, have a function and a category.

The purpose of Equipment Register is:

- To define and update the equipment
- To manage structures of geographical and technical equipment
- To manage the groups of equipment
- To define the diagnosis on equipment
- To manage the equipment technical information
- To manage the equipment financial information



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4.1 TOPOGRAPHICAL DETAILS

Path: Maintenance / Equipment Register / Topographical

Equipment Topographical Module creates equipment and the analysis years maintained for the equipment.

A special type of equipment is the group equipment (defined in Equipment Group Module). Group equipment is useful to group equipment related in some way. A group of equipment can have many equipment and an equipment may be attached to many equipment groups. Group equipment has the same functionality as the equipment in any other module (except for movements and structure, present only to equipment).

The entire purpose of maintenance activity is to make the equipment work properly, by repairing any malfunction in the shortest time possible and preventing other defect occurrence. To perform equipment maintenance, the user can define one or many maintenance jobs for each equipment. These jobs refer to repairing actions for that equipment.

A list of spares can be attached to the equipment (in List of Spares Module) representing the spares needed to perform equipment maintenance activity. This facility is useful for users who don't have the stock modules. There is also the possibility to define a tree-like structure of equipment (in Equipment Structure Module), which means a set of parent-child relations between the equipment.

For an equipment/group, the user can maintain do & don't actions, list of manuals and drawings, depreciation details, contracts, purchase order details, technical specifications, job requests, list of symptoms/ defects/ causes/ remedy and measurement sets. The equipment may have a calendar, similarly to the plant calendar.

The Topographical Details is the module where the equipment is defined.

All the equipment created is of the first level, only in a second step (Structure module) do we organise it hierarchically.

Select from COSWIN menu *Maintenance / Equipment Register / Topographical* to launch the Topographical Details module.

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The Topographical Details window looks by default as follows:

The screenshot shows the 'Topographical Details' window. At the top, there are fields for 'Eqpt Code' (AFCALB17/GTBV01), 'Eqpt Level' (2), and 'Category' (NEL). Below these are 'Description' (BNA Vendobus Slave Adaptor), 'Zone' (NEL), 'Cost Centre' (2711100), 'Function' (AFC/TICKET), 'WP type' (RMACC), 'Entity' (AFC), 'Geo Parent' (empty), and 'Asset ID' (NEL/AFC/ALB/17/GTBV01). A toolbar with icons is on the right. Below the main fields is a tabbed interface with 'Details' selected. The 'Details' tab contains two columns of fields: 'Bar Code' (0772BAS12763), 'User Ref' (COSWIN), 'Incharge Ref' (supervisor), 'Eqpt Location' (OCC RM), 'Phone' (47827428) on the left; and 'Type' (BNA), 'Item Code' (TICKET/MEC/BV/01), 'System Eqp' (AFCALB17/GTM01), 'Priority' (5), 'History' (checked), and 'Last modified on' (26/03/2002) on the right.

Detailed Field Descriptions:

Equipment Code

This is the equipment identifier, a mandatory information of maximum 20 alphanumeric characters. It must be unique among all the Equipment and Equipment Groups.

During creation of new equipment, system will formulate the equipment code according to the Asset ID specified. Therefore, user can simply enter a dummy equipment code during creation. Refers to the section on **Formation of Equipment Code from the Asset Id** for details.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Level

This is the equipment level identifier, indicating the level at which the equipment is located within the equipment structure. Level of System equipment is always equal to 1.

It is a read-only numeric information automatically managed by the system.

Category

This is the equipment category identifier, indicating the technical family to which the equipment belongs.

It is a mandatory information of maximum 10 alphanumeric characters. It must exist in the directory of Categories.

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If not specified, COSWIN proposes the default Category established in COSWIN Configuration's Maintenance / Default Codes.

A selector trigger button (or F2 key) linking to Category Selector is available.

Right-mouse click (or F7 key) will activate the Category Details window for the current code.

Description

This is the Equipment's description, an optional information of maximum 40 alphanumeric characters.

Zone

This is the equipment zone identifier, indicating the physical division to which the equipment belongs. It is a mandatory information of maximum 10 alphanumeric characters. It must exist in the directory of Zones.

If not specified, COSWIN proposes the default Zone established in COSWIN Configuration's Maintenance / Default Codes.

A selector trigger button (or F2 key) linking to Zone Selector is available.

Right-mouse click (or F7 key) will activate the Zone Details window for the current code.

Cost Centre

This is the equipment's cost centre identifier, a mandatory information of maximum 16 alphanumeric characters. It must exist in the directory of Cost Centres.

If not specified, COSWIN proposes the default Cost Centre established in COSWIN Configuration's Maintenance / Default Codes.

This cost centre will be proposed as the equipment job's cost centre during the definition of Job Guidelines for this equipment.

A selector trigger button (or F2 key) linking to Cost Centre Selector is available.

Right-mouse click (or F7 key) will activate the Maintenance Cost Centre Details window for the current code.

Function

This is the equipment's function identifier, a mandatory information of maximum 10 alphanumeric characters. It must exist in the directory of Functions.

If not specified, COSWIN proposes the default Function established in COSWIN Configuration's Maintenance / Default Codes.

A selector trigger button (or F2 key) linking to Function Selector is available.

Right-mouse click (or F7 key) will activate the Function Details window for the current code.

Work Permit Type

This is the type of work permit requested by default for jobs against the equipment. It is an optional information. The provided value must exist in the directory of Work Permit Types.

A selector trigger button (or F2 key) linking to Work Permit Type Selector is available.

Right-mouse click (or F7 key) will activate the Work Permit Type Details window for the current code.

Authority

This is the company entity under which the equipment belongs. It is a mandatory information. The provided value must exist in the directory of Company Entities.

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If not specified, COSWIN proposes the default Authority established in COSWIN Configuration's Maintenance / Default Codes.

A selector trigger button (or F2 key) linking to Company Entity Selector is available.

Right-mouse click (or F7 key) will activate the Company Entity Details window for the current code.

Geo Parent and Description

(Enabled only if the equipment type is Technical)

This field defines which geographical equipment the current technical equipment depends on. It must exist in the directory of Equipments.

A selector trigger button (or F2 key) linking to Equipment Selector is available. The selected equipment must be of Geographical type.

Asset ID

It is an unique identifier of equipment. It is a mandatory information of maximum 32 characters. The Asset ID must conform the format proposed in Asset Naming Convention. Refers to the section on **Asset Naming Convention** for the detailed format.

WP on corrective work order

If checked, indicates that the work permit type from the equipment will be copied to the unplanned/corrective work order created for this equipment.

This field is enabled only if work permit type has been defined for this equipment.

Equipment type

Equipment types are represented by the following icons:



Geographical



Technical

DETAILS TAB:

Bar Code

This is the equipment bar code, an optional information of maximum 16 alphanumeric characters. It must be unique among all Equipments and Equipment Groups. COSWIN will automatically propose the Equipment code as default Bar Code.

User Reference

This is the Equipment's main user identifier, an optional information of maximum 10 alphanumeric characters.

Incharge Reference

This is the identifier of the personnel in charge of the equipment, an optional information of maximum 16 alphanumeric characters.

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Equipment Location

This is the identifier of equipment's location in the Zone, an optional information of maximum 16 alphanumeric characters.

Phone

This is the equipment's nearest telephone, an optional information of maximum 13 alphanumeric characters.

Type

This is the type of the equipment, an optional information of maximum 6 alphanumeric characters.

Item Code

This is the repairable stock item that is equivalent to the equipment, or also known as Line Replaceable Unit. The equipment may have an equivalent stock item if it is repairable, and the equivalent item must also be a repairable item (ie, of item type 2). Please refer to the chapter **Repairable Equipment Management** for more details.

This is an optional information of maximum 20 alphanumeric characters. It must exist in the directory of Stock Items.

A selector trigger button (or F2 key) linking to Items Selector is available.

System Equipment

This is the identifier of the system equipment for the current equipment, a read-only information automatically managed by the system. System equipment refers to the equipment at the top level of an equipment structure.

Priority

This is the equipment priority (for planning purposes), an optional numeric information (one digit: 0...9, with 9 being the lowest priority).

History

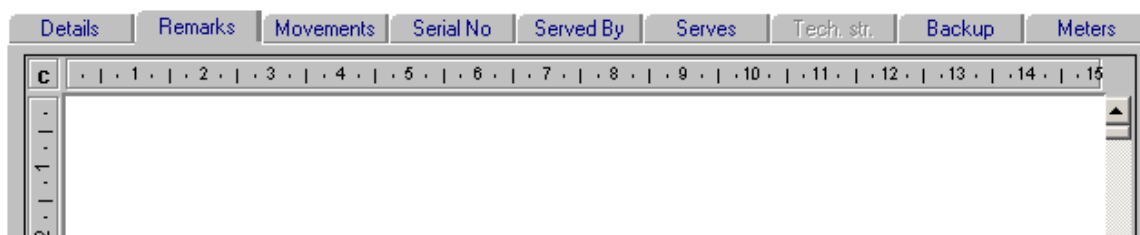
If checked, indicates the Work order details of the equipment will be stored in the History module.

As on

This is the equipment creation or last updating date, a read-only information automatically managed by the system.

REMARKS TAB:

The Remarks tab of Topographical Details window looks by default as follows:



This tab provides supplementary text regarding the equipment.

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The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.

MOVEMENTS TAB:

The Movement tab of Topographical Details window looks by default as follows:



This window displays the various movements made by the equipment:

- From one zone to another zone
- From one function to another; either within the same zone or across different zones
- From one parent to another (within the same zone, function) or isolating an equipment.

Double click on any of the movement record will present the selected record in the ***Equipment Movement Details*** window.

Equipment Movements List Box

Type	The type of the equipment movement: 0 – normal 1 – connect to geographical 2 – disconnect from geographical
Date	The date in which the movement was created.
Time	The time in which the movement was created.
Week/Year	Identifies the week number and year in which the equipment was moved to the zone and function.
Parent Eqt	The Equipment's Parent in its structure.
Parent Description	The Equipment's Parent Description.
Zone	The Equipment's actual Zone identifier.
Function	The Equipment's actual Function identifier.
Category	The Equipment's Category identifier.
Eqt Level	The Equipment's Level in its structure.
Remarks	Information on the movement, e.g. the reason of the equipment movement.
Suplem. Remarks	First free text for movements.
Free text2	Second free text for movements.
Free text3	Third free text for movements.

SERIAL NUMBER HISTORY TAB:

The Serial No tab of Topographical Details window looks by default as follows:

Details	Remarks	Movements	Serial No	Served By	Serves	Tech. str.	Backup	Meters
T Serial No.	T Date							
07750E00155	16-08-2001							

This tab provides the history of the serial numbers of the equivalent repairable item that have been installed on this equipment.

Double click on any of the serial number record will present the selected record in the **Equipment Serial Number Details** window.

Equipment Serial No List Box

Serial No.	The serial number of the equipment.
Date	The date when the equipment was replaced with the item with the given serial number.

Double click on any of the movement record will present the selected record in the **Equipment Serial Number Details** window.

SERVED BY TAB:

The Served By tab of Topographical Details window looks by default as follows:

Details	Remarks	Movements	Serial No	Served By	Serves	Tech. str.	Backup	Meters
T G/T	T Eqt Lvl	T Eqt Code	T Description	T Zone	T Function	T Cost Centre	T Category	
T	2	AFCALB17/GTAC01	AC-DC Converter NEL	AFC/TICKET	2714300	NEL		

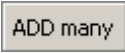

This tab displays the list of equipments that serve the current equipment. That is the proper functioning of the current equipment depends on the proper functioning of these equipment's.

Served By Equipment List Box

G/T	The type of the equipment (G for Geographical, T for Technical).
Eqpt Level	The Equipment's Level in its structure.
Eqpt Code	The Equipment.
Description	The Equipment's Description.
Zone	The Equipment's actual Zone identifier.

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Function	The Equipment's actual Function identifier.
Cost Centre	The Equipment's Cost Centre identifier.
Category	The Equipment's Category identifier.

The list can be updated either by clicking on the non-standard  button to attach new Served By equipment or clicking on the non-standard  button to detach them.

SERVES TAB:

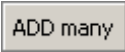

The Serves tab of Topographical Details window looks by default as follows:

Details	Remarks	Movements	Serial No	Served By	Serves	Tech. str.	Backup	Meters
T G/T	T Eqt Lvl	T Eqt Code	T Description	T Zone	T Function	T Cost Centre	T Category	
T	2	AFCALB17/GTCI01	Top LED Customer Information	NEL	AFC/TICKET	2714300	NEL	

This tab displays the list of equipments whose proper functioning depends on the proper functioning of the current equipment.

Serves Equipment List Box

G/T	The type of the equipment (G for Geographical, T for Technical).
Eqpt Lvl	The Equipment's Level in its structure.
Eqpt Code	The Equipment code.
Description	The Equipment's Description.
Zone	The Equipment's actual Zone identifier.
Function	The Equipment's actual Function identifier.
Cost Centre	The Equipment's Cost Centre identifier.
Category	The Equipment's Category identifier.

The list can be updated either by clicking on the non-standard  button to attach new Serves equipment or clicking on the non-standard  button to detach them.

TECHNICAL STRUCTURE TAB:

The Technical Structure tab of Topographical Details window looks by default as follows:

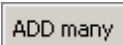
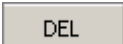
Details	Remarks	Movements	Serial No	Served By	Serves	Tech. str.	Backup	Meters
T G/T	T Eqt Lvl	T Eqt Code	T Description	T Zone	T Function	T Cost Centre	T Category	
T	1	AFCALB17/GTM01	General Ticket Machine	NEL	AFC/TICKET	2714300	NEL	

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This tab is only enabled for equipment with Geographical equipment type. It displays the list of child technical equipments belonging to the current equipment.

Technical structure List Box

G/T	The type of the equipment (always technical, T).
Eqpt Lvl	The Equipment's Level in its structure.
Eqpt Code	The Equipment Code.
Description	The Equipment's Description.
Zone	The Equipment's actual Zone identifier.
Function	The Equipment's actual Function identifier.
Cost Centre	The Equipment's Cost Centre identifier.
Category	The Equipment's Category identifier.

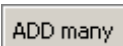

The list can be updated either by clicking on the non-standard  button to attach new equipment or clicking on the non-standard  button to detach them.

BACKUP TAB:

The Backup tab of Topographical Details window looks by default as follows:

Details	Remarks	Movements	Serial No	Served By	Serves	Tech. str.	Backup	Meters
T Eqpt Code	T Description	T Zone	T Function	T Date				
AFCALB17/GTCI02	Top LED Customer Information NEL	AFC/TICKET	09/05/2002					

Backup equipment is the equipment to be used as standby equipment or alternative equipment to the current equipment.

The list can be updated either by clicking on the non-standard  button to attach new equipment or clicking on the non-standard  button to detach them.

Equipment may be deleted regardless backup equipment has been attached or not.

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METER TAB:

The Meters Tab of Topographical Details window looks by default as follows:

Details	Remarks	Movements	Serial No	Served By	Serves	Tech. str.	Backup	Meters
T Meter ID	T Description	T Cumulative	T Type	T Meas. unit	T Frequency	T Freq. unit		
ECS/ELE/0001	KWH READING	0		KWH	1 D			
LOCO/B04/PPHR	Power Pack Hour Meter	0		HR	1 D			
ACT_WO_END_PT	Actual WO Chainage End Point	0		KM	1 D			

This tab displays the list of meters to be read while servicing the equipment. When a work order is created on the equipment, the maintenance staff can update the readings of these meters during feedback on work order through the Work Order Detail module.

Double click on any of the displayed meter details will present the selected records in ***Equipment Meter Details*** window.

Equipment List Box

Meter ID	The code of the meter.
Description	The description of the meter.
Cumulative	This specifies whether the meter is a cumulative meter: 0 – Cumulative Total 1 – Cumulative Increment 2 – Non-Cumulative
Type	This is the meter type.
Meas. Unit	This is the meter unit of measurement.
Frequency	This is the frequency of measurement.
Freq. Unit	This is the measurement unit for frequency of measurement.

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4.1.1 Asset Naming Convention

The Format in Asset Naming Convention is defined as follows:

Line	System	Location	Sub-Location	Asset Type	Asset No	Suffix	CD
AAA/	AAA/	AAA/	XXX/	AAAA	NNNN	A	(CD)

Note: "A" implies alpha character, "N" implies numeric character, "X" implies alphanumeric

Below is a typical example of an Asset Id in the system:

NEL/	POW/	BGK/	B2/	CAM	01		
-------------	-------------	-------------	------------	------------	-----------	--	--

The **Line** field shall consist of three characters and refers to the line with which the item associated. For the North East Line this field shall be "NEL".

The **System** shall consist of up to three characters and refers to the system to which the asset belongs, e.g. "POW" refers to Power and Electrical system.

The **Location** field shall consist of three characters and refers to the physical location of the asset, e.g. "BGK" refers to BUANGKOK station.

The **Sub-location** shall consist of up to three characters and refers to the sub-locations of the asset within its primary location, e.g., "B2" refers to at Basement Level 2 of the primary location.

The **Asset Type** shall consist of between one and four alphanumeric characters and refers to the particular asset type within a system, e.g. "CAM" will refer to a camera.

The **Asset No** shall consist of up to four numeric characters dependent upon the location and/or system.

Where two or more items perform the same function or the two items are joined together, the auxiliary item shall have the same sequential number. These items shall be differentiated by use of the **Suffix**.

For example the electrical distribution is supplied from two separate busbars referenced "A" and "B" and the breakers are labelled as follows:

NEL/ELE/SKG/B1/STA02A

NEL/ELE/SKG/B1/STA02B

If the asset is assigned for use in Civil Defence then the asset label shall indicate this by the addition of "(CD)". This is a fixed field format with no other field codes.

4.1.2 Formation of Equipment Code from the Asset Id

The Equipment Code will be formed from the Asset Id. The equipment code shall be the truncated form of the Asset Code, consisting of up to maximum of 20 characters. The format is as follows:

Asset Code Format

Line	System	Location	Sub-Location	Asset Type	Asset No	Suffix	CD
AAA/	AAA/	AAA/	XXX/	AAAA	NNNN	A	(CD)

Equipment Code Format (Truncated form of Asset Code)

System	Location	Sub-Location	Asset Type	Asset No	Suffix	CD
AAA	AAA	XXX/	AAAA	NNNN	A	CD


Example:

If Asset Code is NEL/DNG/SGK/B1/SPP0101(CD), then
Equipment Code will be DNGSGKB1/SPP0101CD

4.1.3 To Add a New Equipment

Minimum information required to add an equipment, is:

- Equipment identifier
- Equipment Zone
- Equipment Function
- Equipment Category
- Equipment Cost Centre
- Asset ID

Click on the  icon to launch the ADD window.

4.1.4 To Modify an Equipment

The only information that cannot be modified, is:

- Equipment identifier
- Equipment Zone
- Equipment Function
- The equivalent item identifier can be modified only if a repairable item is entered.

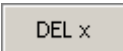
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4.1.5 To Delete an Equipment

An equipment cannot be deleted, if:

- The Equipment is linked to some other equipment (as parent or child in a structure)
- The Equipment is member in a group, with a not null cost allocation (see Percentage in 0 Equipment in Group Details)
- There are planned jobs for the Equipment
- There are Work Orders pending for completion for the Equipment
- The list of spares for the Equipment is not empty
- There are contracts defined on the Equipment
- There are job requests pending for the Equipment
- It is used, as a parent equipment or as a sub-equipment, in PMP Data

Click on the  icon to delete the current Equipment.

COSWIN provides a non-standard  button to delete several equipments at one time. Upon clicking the button, an equipment selector window appears for user to select the equipment to delete.

Geographical equipment deletion is not restricted by the presence of technical equipment attached or served or server equipment.

Deleting an Equipment will result in the following:

- All other details of the Equipment, such as Job Guidelines, movement data, remarks, defects, calendar, will be deleted
- The Equipment is removed from all the groups where it has previously been declared

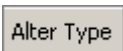
4.1.6 To Alter the Code of an Equipment

Click on the non-standard  button to modify the Equipment identifier.

This option should be used with caution, as it will replace all occurrences of the current equipment code with the new equipment code in the database.

Once the code is altered, the equipment will be referred to by the newly assigned code, throughout all the maintenance modules.

4.1.7 To Alter the Type of an Equipment

Click on the non-standard  button to modify the type of an equipment, either Geographical or Technical.

The following conditions apply when modifying an equipment type:

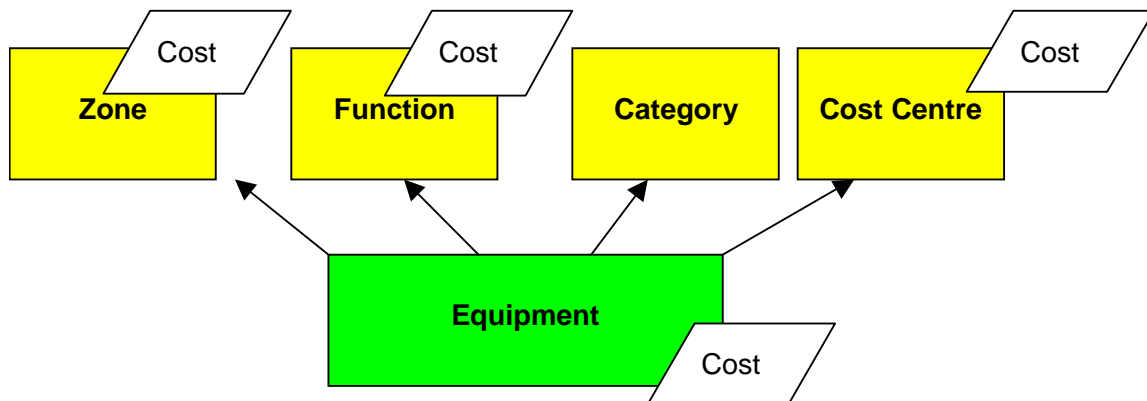
- The type of equipment structure can be changed only for system equipment (root of the structure).
- Geographical system equipment cannot be modified to be technical equipment if any equipment in the geographical structure has technical equipment attached.


This option will automatically change the type of equipment from Geographical to Technical, or Technical to Geographical, depending on the current type of the equipment.

Once the type of the system equipment is changed, all the other equipments in the same equipment structure will be updated with the new structure type.

4.1.8 To View the Cost Analysis by an Equipment

COSWIN provides Cost Analysis by Equipment, Zone, Function and Cost Centre modules but not Category module.

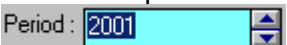


Click on the non-standard  button in the Topographical Details window to view the cost analysis of the current equipment.

Costs Analysis					
Costs for : ELEBGK01/BC01				As on date : 09-09-2001	
Period : 2001				At : 17:23	
INTERNAL	Planned	Unplanned	Others	Totals	%
Resource :	1800.000	0.000	0.000	1800.000 (	47.120)
Material :	1980.052	0.000	0.000	1980.052 (	51.833)
Facility :	0.000	0.000	0.000	0.000 (	0.000)
Misc :	40.000	0.000	0.000	40.000 (	1.047)
Totals :	3820.052	0.000	0.000	3820.052 (	100.000)
%	(100.000)	(0.000)	(0.000)	(100.000)	
WOs :	7	4	0	11	
D/Time :	12.000	0.000	0.000	12.000	
P/Loss :	5.000	0.000	0.000	5.000	
Last Job :	21-06-2001	06-07-2001			

☒ Internal
 ☐ External
 ☐ Total

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These costs represent a balance sheet of the expenses made against the selected equipment for the selected year specified at .

The available periods for Cost Analysis are defined in the *Analysis Control* parameter of COSWIN Configuration's Maintenance module.

The costs displayed are extracted from the Work Order History module.

This module provides a radio button group  to view the type of costs:

- Internal refers to those work orders performed by the local team
- External refers to those work order performed by a third party
- Total refers to both Internal and External

The 3 columns Planned, Unplanned and Others represent the work order types available.

The information displayed are read-only, automatically managed by the system:

Resource

This row specifies the Planned / Unplanned / Other / Total Manpower Costs for the specified criteria.

Material

This row specifies the Planned / Unplanned / Other / Total Material Costs for the specified criteria.

Miscellaneous

This row specifies the Planned / Unplanned / Other / Total Miscellaneous Costs for the specified criteria.

Totals

This row specifies the Planned / Unplanned / Other / Total added Costs (Resource + Material + Miscellaneous) for the specified criteria.

%

This row specifies the percentage of Planned / Unplanned / Other Costs, respectively, from the TOTAL Costs.

Work Orders

This row specifies the number of generated Work Orders (Planned/ Unplanned / Other / Total) allocated for the specified criteria.

Down Time

This row specifies the number of hours (Planned / Unplanned / Other / Total) the equipment did not work for the specified criteria.

Production Loss

This row specifies the Planned / Unplanned / Other / Total production loss, due to the equipment down time, for the specified criteria.

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Last-Job

This row specifies the last Job date (Planned / Unplanned / Other / Total) for the specified criteria.

Costs Type

This radio-button specifies the type of the Costs to be displayed:

- Internal** Internal Costs will be displayed
- External** External Costs will be displayed
- Total** Total Costs (both Internal and External) will be displayed


4.1.9 To Move an Equipment to a different Zone, Function or Parent

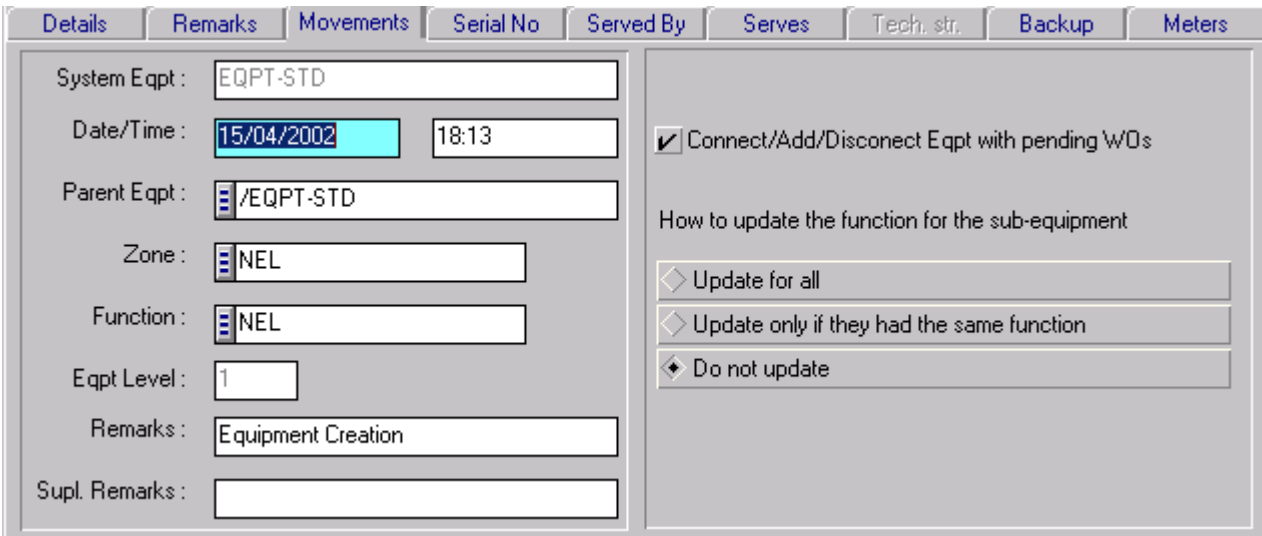
Moving equipment from one zone to another automatically change the zone of the sub equipment. The zone in the corresponding work orders is also changed.

Moving equipment from one function to another may change (on request) the function of the sub equipment. The function in the corresponding work orders is also changed.

NOTE: Not all equipment instances belonging to a structure must have the same function. But all equipment instances belonging to a structure must have the same zone.

To move the equipment through the zone, function or parent:

First click onto the Movements tab and then click on the  icon. The following Equipment Movement Details window appears:



The screenshot shows the 'Equipment Movement Details' window with the 'Movements' tab selected. The window contains the following fields and options:

- System Eqpt:** EQPT-STD
- Date/Time:** 15/04/2002 18:13
- Parent Eqpt:** /EQPT-STD
- Zone:** NEL
- Function:** NEL
- Eqpt Level:** 1
- Remarks:** Equipment Creation
- Supl. Remarks:** (empty)
- ☒ Connect/Add/Disconnect Eqpt with pending 'WO's
- How to update the function for the sub-equipment:**
 - ☐ Update for all
 - ☐ Update only if they had the same function
 - ☒ Do not update

The updateable fields are as follows:

Date/Time

The date/time when the movement is made.

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Parent equipment code

If moving to a new parent, then this would be the identifier of the new parent equipment. Otherwise leave it as the original parent.

Zone

If moving to a new zone, then this would be the identifier of the new zone. Otherwise leave it as the original zone.

Function

If moving to a new function, then this would be the identifier of the new function. Otherwise leave it as the original function.

Remarks

This is the first remark describing the equipment movement.

Supplementary Remarks

This is the second remark describing the equipment movement.

Connect/Add/Disconnect equipment with pending Work Orders

COSWIN will not allow the movement of equipment whose sub-equipments has pending work orders. However, if this checkbox is selected, COSWIN will not perform the checking.

How to update the function for the sub-equipment

This radio-button group specifies the way the sub-equipment functions will be updated, for all the sub-equipment of the equipment to be moved, provided that the equipment function is changed and the equipment has sub-equipment.

Update for all

Update the function for all the associated sub-equipment instances

Update only if they had the same function

Update the sub-equipment functions, only for the equipment's sub-equipment instances that had the same function as their parent equipment

Do not update

Do not update the functions for sub-equipment

4.1.10 Equipment Serial Number Details

Repairable equipment is equipment that has an equivalent stock item (of repairable type) and is maintained in two steps:

First, the broken equipment (identified by a specific serial number) is replaced with an available one from the stock and the production may be resumed.


Then, the broken one is actually repaired (if possible).

In order to keep track of these maintenance operations, it is essential (and mandatory) to provide serial numbers for each instance of repairable equipment and repairable items.

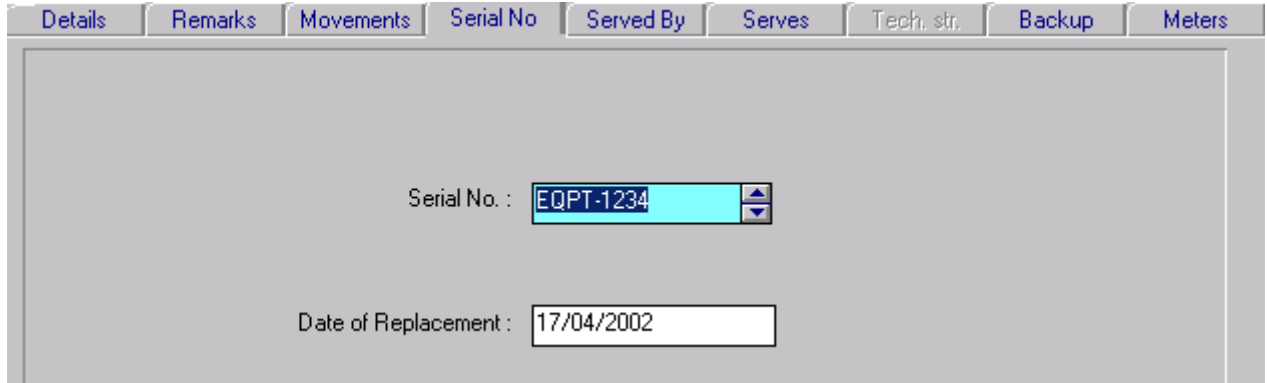
However, COSWIN lets the user supply serial numbers to any equipment engaged in a maintenance operation.

The serial numbers that can be provided for an equipment are not limited.

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Double click on any of the displayed Serial Numbers in the Serial No List box of Serial No tab, or click on the  icon while at the Serial No tab, will activate the Equipment Serial Number Details window.

The Equipment Serial Number Details window looks by default as follows:



Detailed Field Descriptions:

Serial No

This is the item serial number, a mandatory information of maximum 12 alphanumeric characters.


Date of replacement

This is the item replacement date, a mandatory information, which cannot be later than current date. For non-repairable equipment, this date represents the serial number creation.

4.1.10.1 To Add a New Serial Number Details

Minimum information required to add serial numbers to the equipment is:

- Serial Number
- Replacement Date

Click on the  icon to launch the ADD window.

4.1.10.2 To Modify a Serial Number Details

Only the most recent serial number can be modified (the serial number currently present on the equipment).


The Replacement Date information can always be modified.

4.1.10.3 To Delete a Serial Number

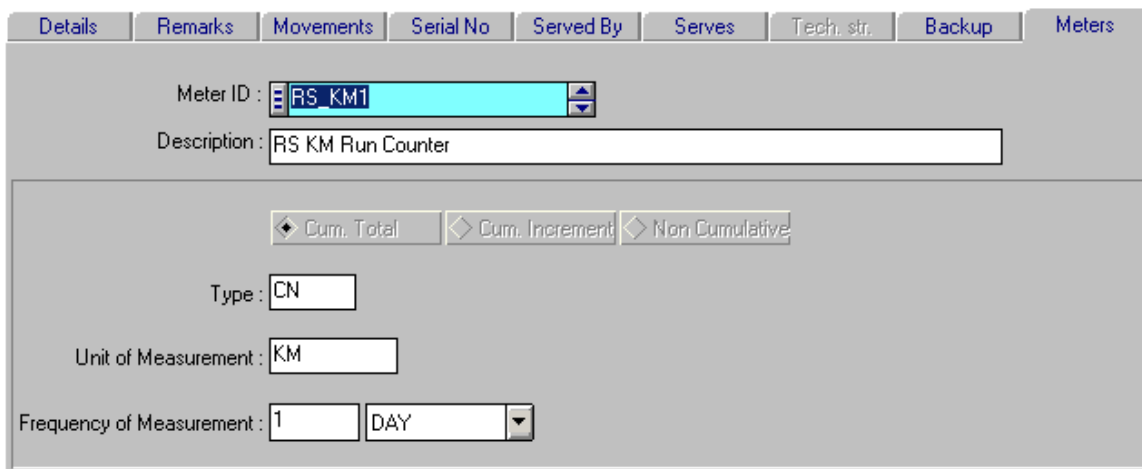
A serial number once assigned CANNOT be deleted.

4.1.11 Equipment Meter Details

This window defines the list of meters to be read while servicing the equipment. When a work order is created on the equipment, the maintenance staff can update the readings of these meters during feedback on work order through the Work Order Detail module.

Double click on any of the displayed Meters in the Meter List box of Meters tab, or click on the  icon while at the Meter tab, will activate the Equipment Meter Details window.

The Equipment Meter Details window looks by default as follows:



Detailed Field Descriptions:

Meter ID

This is the code of the meter, a mandatory information. It must exist in the directory of Meters.

A selector trigger button (or F2 key) linking to Meters Selector is available.

Right-mouse click (or F7 key) will activate the Meter Details window for the current code.

Description

This is the description of the meter, a read-only information managed by the system.

Cumulative

This check-box specifies whether the meter is a cumulative meter. It is a read-only information automatically managed by the system.

Type

This is the meter type, a read-only information automatically managed by the system.

Unit of Measurement

This is the meter unit of measurement, a read-only information automatically managed by the system.

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Frequency of Measurement

This is the frequency of measurement, a read-only information automatically managed by the system.


Frequency Unit

This is the measurement unit for frequency of measurement, a read-only information automatically managed by the system.

4.1.11.1 To Attach a Meter to an Equipment


Minimum information required to add meter to the equipment is:

- Meter Code

Click on the  icon to launch the ADD window.

4.1.11.2 To Detach a Meter from an Equipment

There are no restrictions in detaching the meters from equipment.

Click on the  icon to detach the current Meter from the Equipment.

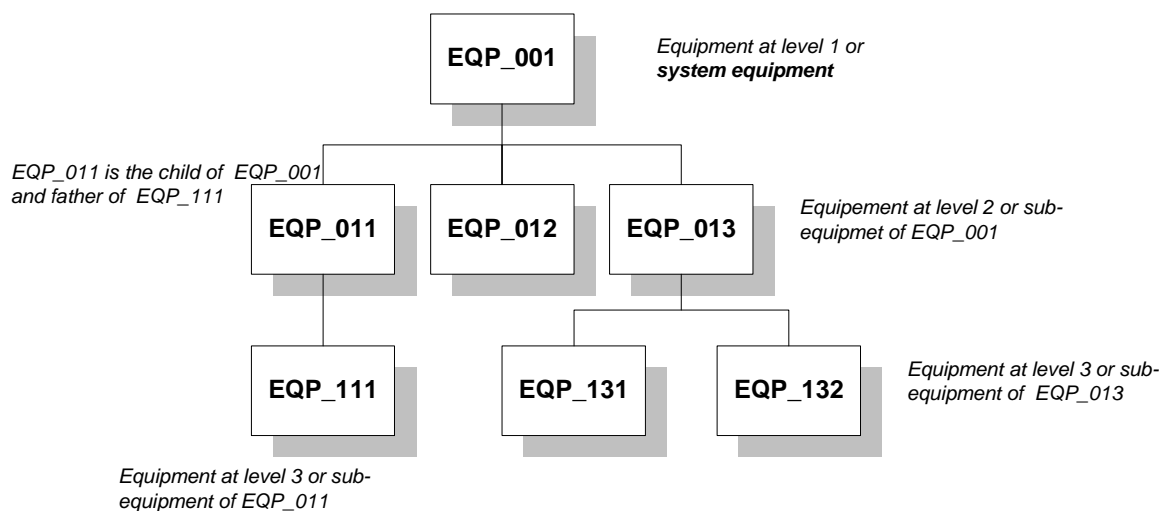
4.2 EQUIPMENT STRUCTURE

Path: Maintenance / Equipment Register / Structure

This module establishes the relationship between equipment as parent and child.

An equipment can have many children however it can be only connected to one parent. A structure can have a maximum of 99 levels.

The highest level of equipment in the structure is called « System Equipment » and other equipments are called « Sub Equipment ».



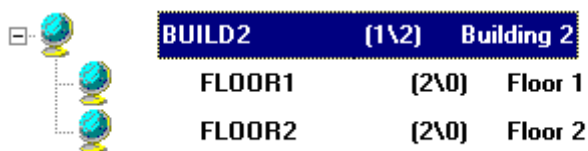
CONCEPT

In COSWIN, there are two types of structure: Geographical and Technical.

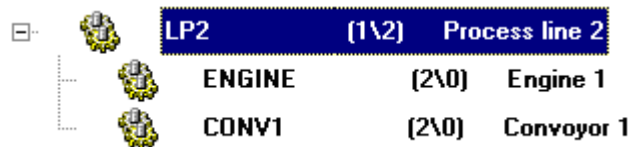
Links can be defined between technical and geographical equipment.

Equipment belonging to a same structure must have the same type, either Geographical or Technical.

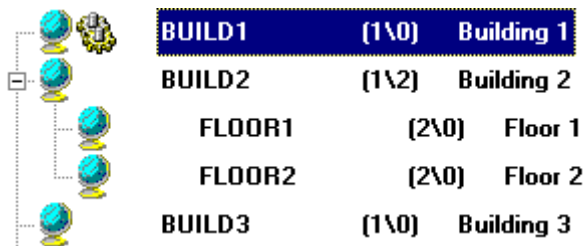
Geographical Structure




Technical structure




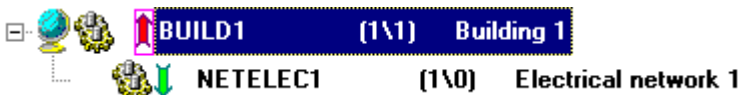
Geographical Structure with Technical Equipment Link



Icon representing technical equipment  indicates the existing link with geographical equipment. A click on this icon will display the first level of equipments of the corresponding technical link.

Served-By and Serves icon in the structure

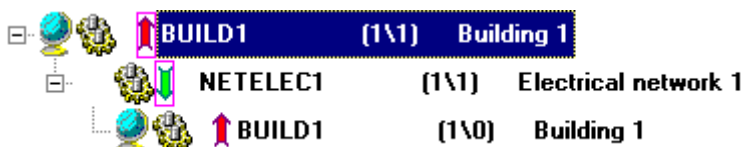
Icon representing "served by"  indicates the existing link. A click on this icon will show you all the equipment, which serves this one:



Equipment BUILD1 (geographical) is served by NETELEC1 (technical)

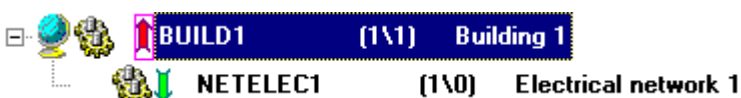
Equipment NETELEC1 has a green arrow  indicating that it serves another structure.

Click on this  icon and the equipment served by this will be displayed:



In this case BUILD1 is displayed.

To avoid this loop structure being shown (equipment BUILD1 being displayed twice) tick the checkbox "Set as root" to fix the current equipment as the root of the structure:

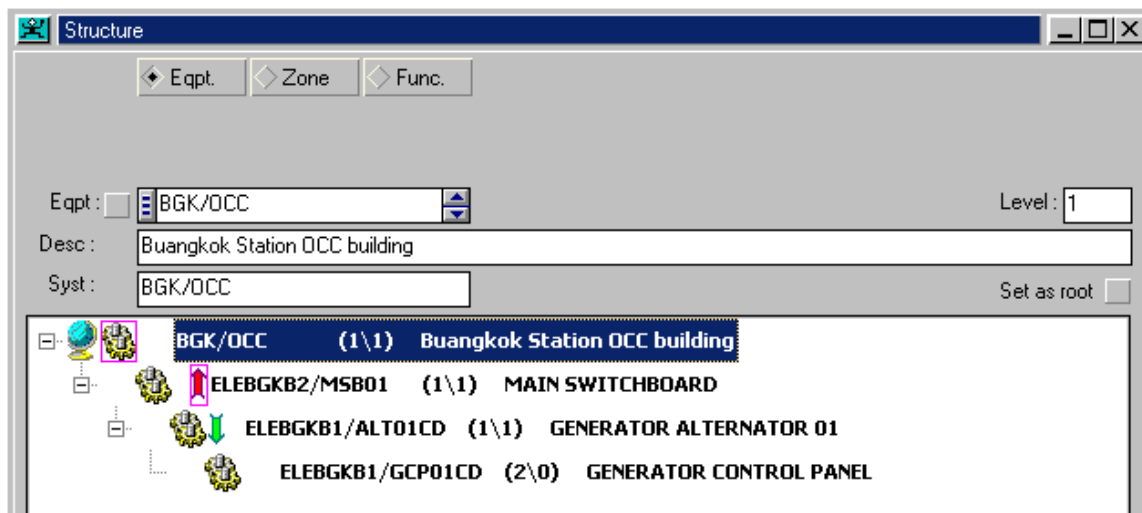


This checkbox will help to display only the relation between serve and served by.

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Select from COSWIN menu *Maintenance / Equipment Register / Structure* to launch the Equipment Structure module.

The Equipment Structure window looks by default as follows:



Detailed Field Descriptions:

Equipment

Current equipment code

Level

Level of the current equipment within the structure

Description

Current equipment description

System

System equipment of the current equipment

Set as root

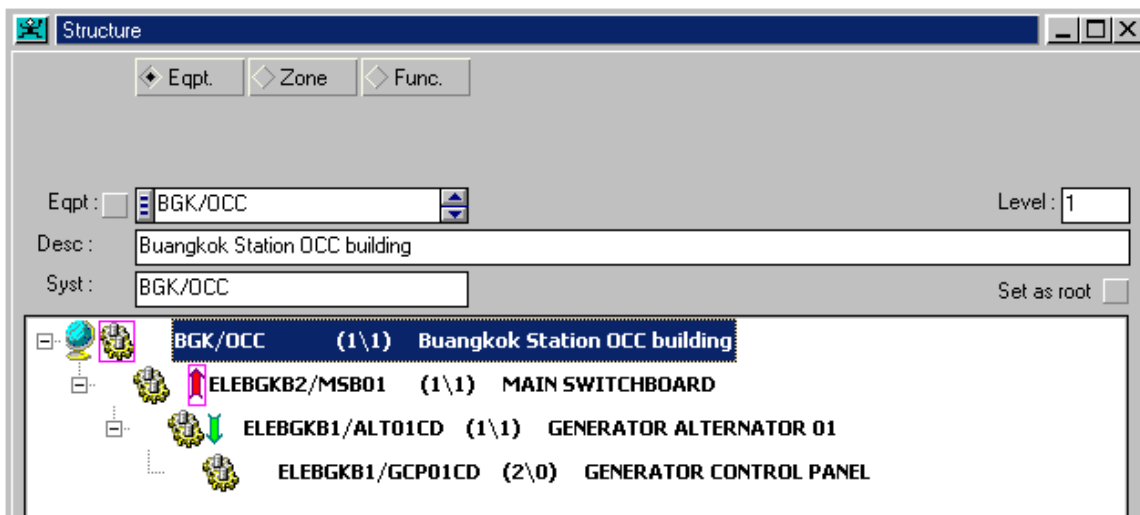
If checked, the current equipment will always be displayed as the root of the structure.

NOTE:

At the right of each equipment code are parentheses containing two numbers. The first number is the level that equipment is on. The second number is the number of immediate children that the equipment has.

4.2.1 To Display the Various Views of the Structure

It is possible to display structure of zone or function by clicking onto radio buttons Zone or Function.



When Zone or Function view is selected, the list of level-one equipment is shown. To get the global vision of the structure, you will just have to expand it.

To view the system equipment of the current structure, click on the non-standard

System

button. To view the geographical parent of the current structure, click on the non-standard

Geograph.

4.2.2 To View the Equipment Topographical Details from the Structure

Select the equipment at the **Equipment** field of the Structure window.




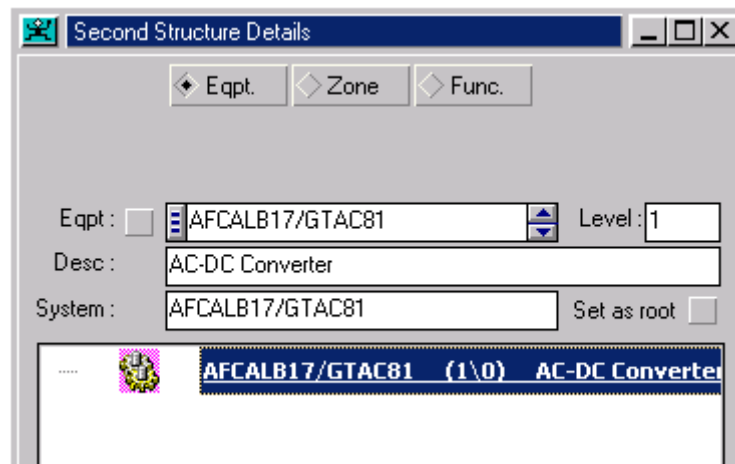
Click on the Topo icon at the main toolbar and the topographical details of the selected equipment will be displayed.

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4.2.3 To Connect to an Equipment Structure


Select the equipment that is to be the parent equipment at the **Equipment** field of the Structure window.

Click on the non-standard button  on the COSWIN toolbar and a Second Structure Details window appears:



Select the equipment to be connected to the structure from the Second Structure Details window, by clicking on the icon as well as on the equipment code displayed.

Drag the equipment from Second Structure window and drop it onto the equipment icon at the main Structure window. A link will be formed.

Click on the  icon and a new structure will be saved.

4.2.4 To Disconnect from an Equipment Structure

Select the equipment to be disconnected from the Equipment Structure window, by clicking on the icon as well as on the equipment code displayed, and click on the non-standard

 button.

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4.3 EQUIPMENT CALENDAR

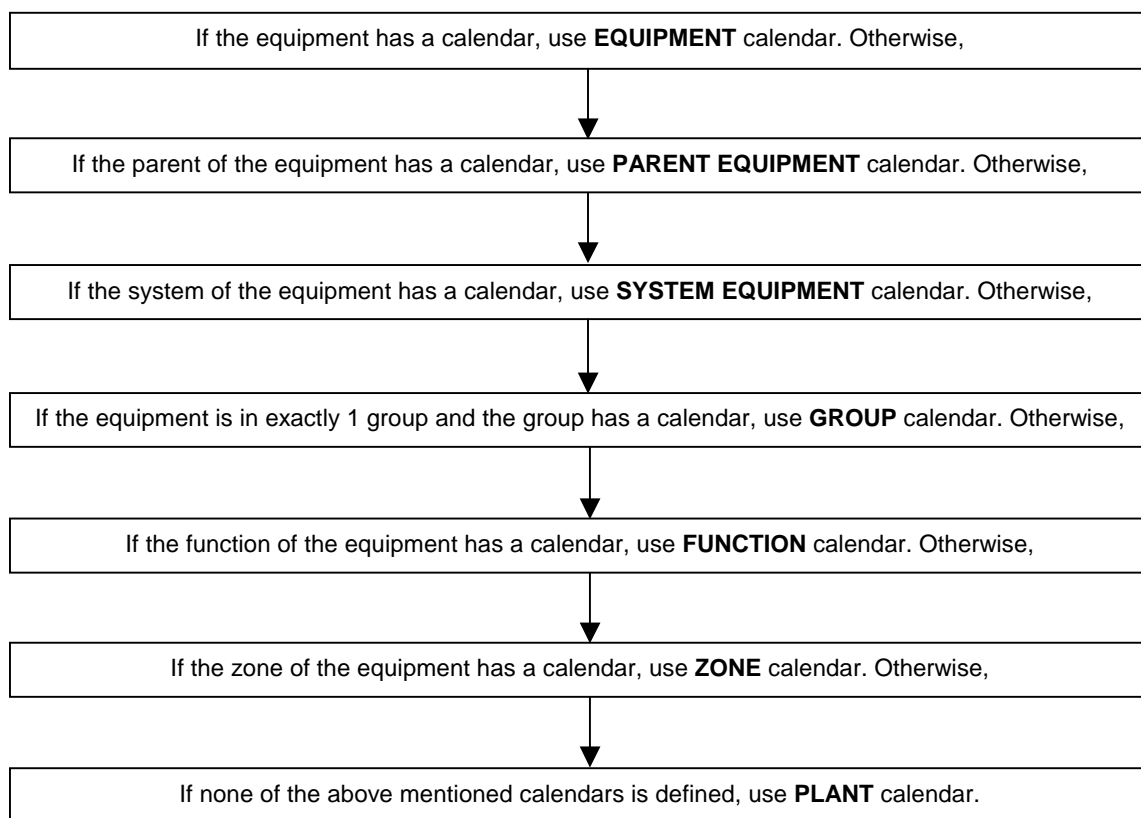
Path: Maintenance / Equipment Register / Calendars

In COSWIN, the calendar modules are used to define the calendars of the production department in the plant, on different levels.

The calendars are defined over a period of time according to the following criteria:

- The period is made up by a number of years which have to be contiguous
- All calendars will contain at least the mandatory period
- The mandatory period is the period, which lasts between the years BEGIN and END defined in the Calendar Control of COSWIN Configuration's Maintenance module.

The rules to determine a calendar for an equipment:



Select from COSWIN menu *Maintenance / Equipment Register / Calendar* to launch the Equipment Calendar module.

To determine which calendar a equipment is currently using, refers to the indicator at the bottom of the window:

The screenshot displays the 'Equipment Calendar' window. At the top, the title bar reads 'Equipment Calendar'. On the left, there's a sidebar with 'Eqpt.: /EQPT-STD' and 'Name: Eqpt STD'. The main area shows four monthly calendars for May, June, July, and August 2002. Each calendar is a grid with days of the week (M, T, W, T, F, S, S) and dates. The 'Def.: Equipment' field in the bottom status bar is circled. On the right, a vertical toolbar contains buttons: OK, Cancel, Save, Add, Delete, Go To ..., Up, Down, Plant Cal., and Prepare. Below these is a legend with colored squares: black for 'Normal', magenta for 'Peak', green for 'Shutdown', blue for 'Holiday', red for 'Wk Off', and yellow for 'Hrs/Day'. The bottom status bar shows 'From: 2001 To: 2003 Def.: Equipment Code: /EQPT-STD Wrk. Hrs: 0 Start time: 0:0'.

In this case, the equipment ELEBGK01/BC03 does not has its own calendar, it is using the Plant Calendar.

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4.3.1 To Create a Equipment Calendar

To create a calendar for the Equipment, click on the **ADD** button and the following prompt appears:

Specify the start and end period for the calendar. Note that the calendar created must consist of the mandatory period defined in the Calendar Control of COSWIN Configuration's Maintenance module.

When a calendar is first created for an equipment, the plant calendar is copied by default for the period defined for the equipment calendar. This period cannot exceed the period where the plant calendar is defined.

The creation must be saved using the **SAVE** button otherwise the creation will be discarded.

4.3.2 To Delete the Equipment Calendar

To delete the equipment calendar, click on the **DELETE** button and specify the entire calendar period to be deleted:

There is 2 options available for deletion:

‘**Up To**’ option is to delete from the start of calendar up till the user-specified year.

‘**Since**’ option is to delete since the user-specified year till the end of calendar.

4.3.3 To Extend the Calendar Period

Use the **ADD** button to extends the Calendar with the following restrictions apply:

- The covered period must be contiguous (between any existent periods there must not exist an uncovered period; e.g. if 1993 Calendar exists, and 1996 Calendar is specified, the covered period will finally be 1993, 1994, 1995, 1996)
- The covered period must include the mandatory period specified in COSWIN parameters

When adding an equipment Calendar, the inherited Calendar template is used (i.e. the structure of normal / peak / shutdown / holiday / week off days).

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4.3.4 To Delete a specified Period

Use the **DELETE** button to delete a specified period with the following restrictions apply:

- The period to be deleted extends from the Calendar period beginning or until the Calendar period ending
- The mandatory period is not deleted

An equipment calendar cannot be deleted if it has been inherited.

4.3.5 Other Available Function Buttons

Go To

Displays a user-specified period, among the existent Calendar periods.

Up

Displays the previous month from the current year.

Down

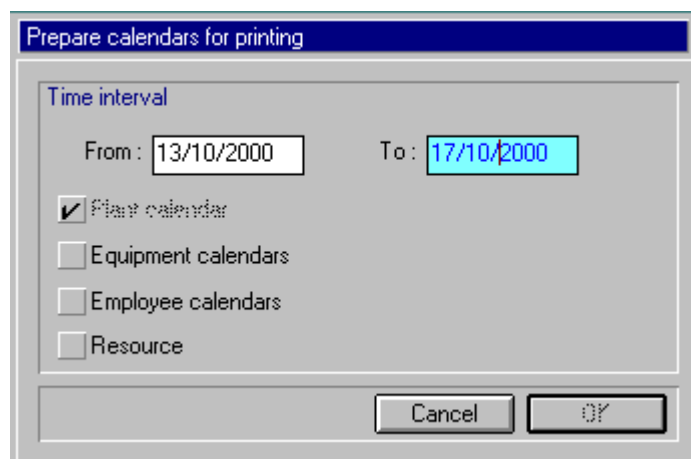
Displays the next month from the current year.

Plant Calendar

Opens the window Plant-calendar module, in order to display the plant's Calendar.

Prepare

Opens the Prepare Calendars for Printing window, in order to provide printing options.



When the equipment or employee calendars is selected, a field appears, starting from which the record will be extracted.

Normal

Specifies that the user selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a normal production period, provided that the selected period is not an inherited one, in which case it cannot be changed.

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Peak

Specifies that the user selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a peak production period, provided that the selected period is not an inherited one, in which case it cannot be changed.

Shutdown

Specifies that the user selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a shutdown period, provided that the selected period is not an inherited one, in which case it cannot be changed.

Holiday

Specifies that the user-selected period (the user selects a Calendar period, by highlighting it using the mouse or the keyboard) is considered a holiday period, provided that the selected period is not an inherited one, in which case it cannot be changed.

Weekly Off

Specifies which of the user selected period days of week will be considered free days, provided that the selected period is not an inherited one, in which case it cannot be changed.

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4.4 EQUIPMENT GROUP

Path: Maintenance / Equipment Register / Group

A *group* consists of one or more equipment instances related to each other. If several equipments have similar behaviour and serve similar purposes, they can be grouped together. Work Orders can then be generated upon the entire group of equipment instead of having one Work Order generated for each equipment in the group.

A group of equipment may consist of many equipment instances and an equipment may be attached to many equipment groups.

The equipment instances in a Group may belong to different Zones, different Functions, different Categories, or different Cost Centres.

There is no limit to the number of equipments that can be attached to a group.

A group of equipment has the same functionality as the equipment in any other module (except for movements and structure, present only to equipment). The user can define jobs for a group, plan jobs for a group and release Work Orders for a group.

It is identified by COSWIN as a level 0 equipment but cannot be included in an equipments structure.

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Select from COSWIN menu *Maintenance / Equipment Register / Group* to launch the Group of Equipment module.

The Group of Equipments window looks by default as follows:

Detailed Field Descriptions:

Group Code

This is the equipment Group identifier, a mandatory alphanumeric information of maximum 16 alphanumeric characters. It must be unique among all the Equipment Groups as well as among all the Equipments.

A selector trigger button (or F2 key) linking to Group Selector is available.

Zone

This is the equipment group zone identifier, a mandatory alphanumeric information of maximum 10 alphanumeric characters. It must exist in the directory of Zones.

A selector trigger button (or F2 key) linking to Zone Selector is available.

Right-mouse click (or F7 key) will activate the Zone Details window for the current code.

Description

This is the equipment Group description, an optional alphanumeric information of maximum 40 alphanumeric characters.

Category

This is the identifier of the equipment group category, a mandatory alphanumeric information of maximum 10 alphanumeric characters. It must exist in the directory of Categories.

A selector trigger button (or F2 key) linking to Category Selector is available.

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Right-mouse click (or F7 key) will activate the Category Details window for the current code.

Function

This is the equipment group function identifier, a mandatory alphanumeric information of maximum 10 alphanumeric characters. It must exist in the directory of Functions.

A selector trigger button (or F2 key) linking to Function Selector is available.

Right-mouse click (or F7 key) will activate the Function Details window for the current code.

W.P. Type

This is the type of work permit that this equipment group requires when maintenance work to be performed on it.

Entity

This is the company entity that this equipment group belongs to.

Bar Code

This is the equipment group Bar Code, an optional alphanumeric information of maximum 16 alphanumeric characters. It must be unique among all Equipments and Equipment Groups.

Incharge Reference

This is the identifier of the personnel in charge with the equipment group, an optional alphanumeric information of maximum 16 alphanumeric characters.

Cost Centre

This is the equipment group Cost Centre identifier, a mandatory alphanumeric information of maximum 16 alphanumeric characters. It must exist in the directory of Cost Centres.

A selector trigger button (or F2 key) linking to Cost Centre Selector is available.

Right-mouse click (or F7 key) will activate the Cost Centre Details window for the current code.

Charge to Function and Zone of Equipment

This is the first Cost allocation flag of the Group, which defines the distribution of costs on equipment, zones and functions.

This flag, if checked, denotes that costs will be distributed to the equipments belonging to the group and to their Zones and Functions, according to the percentages defined in the Cost column. Otherwise, if the flag is unchecked, the cost will be charged to the group's Zone and Function.

Cost Centre of Equipment

This is the second Cost allocation flag of the Group, which defines the distribution of costs on cost centres.

This flag, if checked, denotes that costs will be charged to the Cost Centres of the equipments belonging to the group, according to the percentages defined in the Cost column. Otherwise, if the flag is unchecked, the cost will be charged to the group's Cost Centre.

Equipment Count

This is the number of equipment members in the group, a read-only information automatically managed by the system.

Priority

This is the Group's priority, for jobs planning, an optional numeric information (one digit: 0...9; 9 has the lowest priority).

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History

If checked, the Work Orders created for the group are to be stored in History module.

EQUIPMENT TAB:

This tab lists the Equipment instances in a Group of Equipment.

The Equipment tab of Group of Equipments window looks by default as follows:

Details		Eqpts					
T Eqt Lvl	T Eqt Code	T Description	T %Cost	T Cost Centre	T Function	T Zone	T Cat
1	AMSNE1215/FS101	FILE SERVER	50.00	2714100	AMS/AMS	NEL	NEL
1	AMSNE1215/FS201	HOTSTANDBY FILE SERVER	50.00	2714100	AMS/AMS	NEL	NEL


Equipment List Box

Eqpt Lvl	The Equipment's level in its structure
Eqpt Code	The Equipment's identifier
Description	The Equipment's description
%Cost	This is the Equipment's cost percentage with which the Equipment joins the Group
Cost Centre	This is the Equipment's Cost Centre
Function	This is the Equipment's Function
Zone	This is the Equipment's Zone
Category	This is the Equipment's Category
Parent Eqpt	This is the Equipment's Parent in its structure
System Eqpt	This is the Equipment's System in its structure
Item Code	This is the Equipment's Item equivalence
Bar Code	This is the Equipment's Bar Code
Last Modified	This is the Equipment's creation or last updating date

4.4.1 To Add a New Group

Minimum information required to add an equipment Group, is:

- Group identifier
- Zone identifier
- Function identifier
- Category identifier
- Cost Centre identifier

Click on the  icon to launch the ADD window.

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4.4.2 To Modify an Equipment Group


All the information, in this window, can be modified, except:

- Group identifier

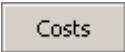
4.4.3 To Delete an Equipment Group

The equipment Group cannot be deleted, if:

- There are planned Jobs for the Group
- There are Work Orders pending completion for the Group

Click on the  icon to delete the current Equipment Group.

4.4.4 To View Cost Analysis by Equipment Group

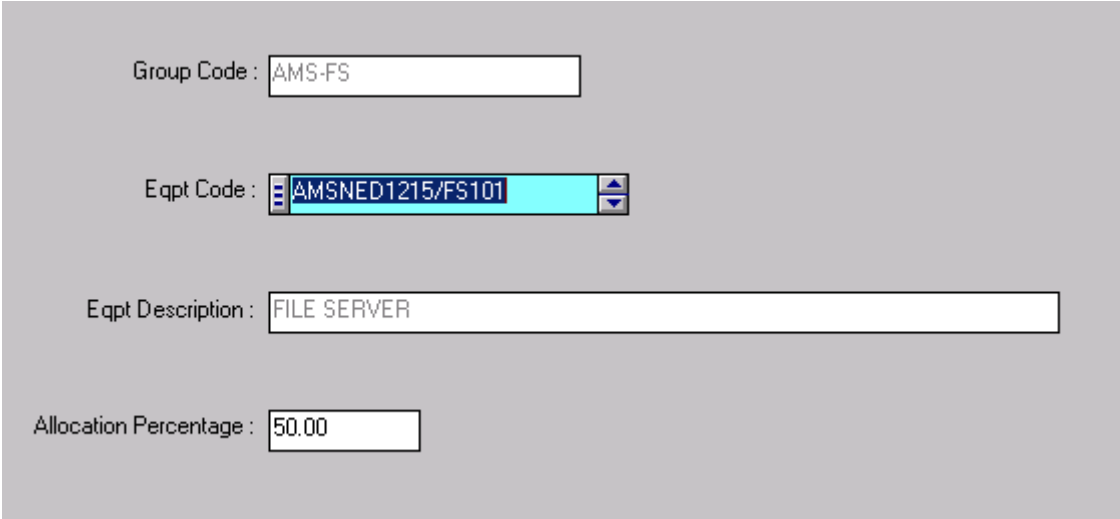
Click on the non-standard  button to view the cost analysis of the current group.

The detail is similar to that of the Cost Analysis by Equipment.

4.4.5 Equipment in Group Details

Double click on any of the displayed equipment in the Equipment in Group List box of Equipment tab will activate the Equipment in Group Details window.

The Equipment in Group Details window looks by default as follows:



Group Code :

Eqpt Code :

Eqpt Description :

Allocation Percentage :

Detailed Field Descriptions:

Group Code

This is the equipment group identifier, a read-only information automatically managed by the system.

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Equipment Code

This is the identifier of the equipment itself, in the group, a mandatory information that can take up to 16 alphanumeric characters. It must exist in the directory of Equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Equipment Description

This is the description of the equipment, a read-only information automatically managed by the system.

Allocation Percentage


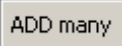
This is the cost percentage of the equipment in the total equipment group costs, an optional positive numeric information (by default is 0).

4.4.5.1 To Attach an Equipment to a Group

Minimum information required to add an equipment in the group is:

- Equipment identifier

Once the group costs have been covered, that is, sum of the group's equipment costs percentage is 100%, one cannot add any more equipment to the group.

Click on the  icon to add one equipment to a Group. Alternatively, to add several equipments to the group at one time, click on the non-standard  button and pick the equipments from the Equipment Selector opened.


4.4.5.2 To Modify an Equipment details in the Group

The only information that can be modified is

- Percentage

4.4.5.3 To Detach an Equipment from a Group

Any equipment can be deleted from its group without restrictions.

Click on the  icon to detach the current Equipment from the Group.

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4.5 EQUIPMENT FACILITY

Path: Maintenance / Equipment Register / Facility

The module is used to manage the maintenance facilities (or simply facilities), and the equivalence between the maintenance facilities and equipment. Equipment can act as different facilities. For example, the same equipment can be used to perform different activities and therefore it can be seen as different facilities provided.

Maintenance facilities may be sharable or not. Sharable maintenance facilities may be used concurrently by several work orders.

For each maintenance facility several equipment can be defined as facility instances. At least one facility instance shall be defined for each maintenance facility. The sharable aspect of the maintenance facility will be inherited by the facility instances but the user can change the sharable aspect of each and any facility instance.

Select from COSWIN menu *Maintenance / Equipment Register / Facility* to launch the Facility module.

The Facility Details window looks by default as follows:

Facility Details

Facility Code : B1 Buffer Sidings 1

Details Instance Usage

Rate : 1.00

Sharable : 1. Sharable

Time Unit : 1. Day

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Detailed Field Descriptions:

Facility Code

This is the maintenance facility reference code, a mandatory information of maximum 10 alphanumeric characters. It must be unique among all Maintenance Facilities.

A selector trigger button (or F2 key) linking to Facility Selector is available.

Description

This is the maintenance facility's description, a mandatory information of maximum 40 alphanumeric characters.

Rate

This is the cost of facility usage per time unit, a mandatory positive information. It is the default rate for the facility instances and the facility requirement.

Sharable

This flag specifies if the maintenance facility can be used concurrently in several work orders. It is a mandatory information. Possible values are: '0 – NOT SHARABLE' and '1 – SHARABLE'.

Time Unit

This is the time unit for which the rate is expressed. It is a mandatory integer information. Possible values are: 0-HOUR, 1-DAY or 2-WEEK

INSTANCE TAB:

The Instance tab of Facility Details window looks by default as follows:

TEqpt Code	TDescription	TSharable	TTime unit	TRate	TZone	TFunction	TCategory
TRKNEDB1/B1L	Berthing Track 1 Left Hand Rail	1	1	1.00 NEL	TRK/RAIL	NEL	
TRKNEDB1/B1R	Berthing Track 1 Right Hand Rail	1	1	1.00 NEL	TRK/RAIL	NEL	

This tab displays the list of equipments defined as the instances for this facility.

Double click on any of the instance record will present the selected record in the **Facility Instance Details** window.

Facility Instances List Box

Eqpt Code	This is the code of the equipment being the instance
Description	This is the description of the equipment being the instance
Sharable	Specifies if the facility instance can be used concurrently by several work orders
Time Unit	This is the time unit used to express the rate of usage of the equipment being the instance
Rate	This is the cost of usage per time unit of the equipment being the instance

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Zone	This is the zone of the equipment being the instance
Function	This is the function of the equipment being the instance
Category	This is the category of the equipment being the instance
Eqpt Level	This is the level of the equipment being the instance

USAGE TAB:

The Usage tab of Facility Details window looks by default as follows:

Details Instance Usage							
Eqpt Code	Description	Sharable	Status	Start Date	Start Time	End Date	End Time
TRKNEDB1/B1L	Berthing Track 1 Left Hand Rail	1	0	21/03/2002	00:00	21/03/2002	00:00
TRKNEDD1/D1L	Berthing Track 1 Left Hand Rail	1	0	23/03/2002	00:00	23/03/2002	00:00
TRKNEDB1/B1L	Berthing Track 1 Left Hand Rail	1	2	25/03/2002	00:00	25/03/2002	00:00
TRKNEDB1/B1L	Berthing Track 1 Left Hand Rail	1	0	12/04/2002	00:00	12/04/2002	00:00
TRKNEDB1/B1L	Berthing Track 1 Left Hand Rail	1	0	18/04/2002	00:00	18/04/2002	00:00
TRKNEDB1/B1L	Berthing Track 1 Left Hand Rail	1	0	18/04/2002	00:00	18/04/2002	00:00
TRKNEDB1/B1L	Berthing Track 1 Left Hand Rail	1	0	18/04/2002	00:00	18/04/2002	00:00

The Facility Usage tab displays date/time that the facility instances have been used. This is useful for checking the facility availability on a certain date. This window is read-only and automatically updated by the system.

Eqpt Code

This are the code of the equipment used as facility instance.

Description

This is the description of the equipment used as facility instance.

Sharable

Specifies if the facility instance may be used concurrently by other work orders. Possible values are: '0 – NOT SHARABLE' and '1 – SHARABLE'.

Status

This is the status of the facility usage with the following possible values: '0 – REQUEST', '1 – APPROVED' and '2 – USED'.

Start Date

This is the date when the facility instance starts to be used.

Start Time

This is the time when the facility instance starts to be used.

End Date

This is the date when the facility instance is closed to be used.

End Time

This is the time when the facility instance is closed to be used.

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Worked Time

This is the number of facility instance time units actually used for the work.

Time Unit

This is the unit of measure for the time facility instance is used to do the work.

Rate

This is the unit cost per time unit of using the equipment as the facility instance.

Cost

This is the actual cost incurred in using the equipment as the facility instance.

Planned

Value 1 indicates the facility instance usage is planned and value 0 is unplanned.


Requested Time

This is the number of facility instance time units has been requested for used in the work.

4.5.1 To Add a New Facility

Minimum information required to add a maintenance facility is:

- Facility code
- Facility description
- At least one facility instance shall be defined for the new created maintenance facility

Click on the  icon to launch the ADD window.

4.5.2 To Modify a Facility

The information that can be modified, is:

- Facility description
- Sharable

4.5.3 To Delete a Facility

Maintenance facilities cannot be deleted, if:

- They are used in facility requirements by equipment jobs
- Any of the facility instances is used in a work order

Click on the  icon to delete the current Facility.

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4.5.4 Facility Instance Details

Detailed Field Descriptions:

Eqpt Code

This is the code of the equipment acting as a facility, a mandatory information. It must exist in the directory of Equipment and should be unique among the instances of a maintenance facility.

Equipment Description, Zone, Function, Category, Level

These information are read only, automatically managed by the system.

Rate

This is the cost of facility instance usage per time unit, a mandatory positive information. It is the default rate for the facility usage.

Sharable

This flag specify if the facility instance can be used concurrently by several work orders. It is a mandatory information with valid options as: '0-Not Sharable' and '1-Sharable'.

Time Unit


This is the time unit for which the rate is expressed. It is a mandatory integer information with valid options as: 0-HOUR, 1-DAY or 2-WEEK

4.5.4.1 To Add a New Instance to a Facility

Minimum information required to add a facility instance to a maintenance facility is:

- Code
- Rate
- Time Unit

The system shall propose the sharable attribute, rate and the time unit of the maintenance facility as the sharable attribute, rate and time unit of the facility instance.

Click on the  icon to launch the ADD window.

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4.5.4.2 To Modify an Instance of a Facility

The information that can be modified is:

- Rate
- Time Unit
- Sharable

4.5.4.3 To Delete an Instance from a Facility

A facility instance cannot be deleted while it is in use in a work order. The last facility instance cannot be deleted from the maintenance facility.

Click on the  icon to delete the current Instance from the Facility.

4.6 TECHNICAL SPECIFICATION

Path: Maintenance / Equipment Register / Technical / Specifications

This module aids the user in maintaining *specification* details of equipment. For each equipment, the general specification details like capacity, rating, manufacturer reference, make, etc. can be maintained. In addition, provision is available to maintain detailed technical specifications of different classes like Mechanical specifications, Electrical specifications, etc.

Select from COSWIN menu *Maintenance / Equipment Register / Technical / Specifications* to launch the Technical Specification module.

The Technical Specification Details window looks by default as follows:

Detailed Field Descriptions:

Eqpt Code

This is the Equipment identifier, for which Specifications are provided, a mandatory information of maximum 16 alphanumeric characters. It must exist in the directory of Equipments.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

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Equipment description

This is the Equipment description, a read-only information automatically managed by the system.

Model No

This is the identifier of the Equipment's model number, an optional alphanumeric information of maximum 24 alphanumeric characters.

Manufacturer

This is the identifier of the Equipment's manufacturer, an optional alphanumeric information of maximum 16 alphanumeric characters. It must exist in the directory of Manufacturers.

A selector trigger button (or F2 key) linking to Manufacturer Selector is available.

Right-mouse click (or F7 key) will activate the Manufacturer Details window for the current code.

Supplier

This is the identifier of the Equipment's supplier, an optional alphanumeric information of maximum 16 characters. It must exist in the directory of Maintenance Suppliers.

A selector trigger button (or F2 key) linking to Maintenance Supplier Selector is available.

Right-mouse click (or F7 key) will activate the Maintenance Supplier Details window for the current code.

Capacity

This is the Equipment Capacity, an optional information of maximum 16 alphanumeric characters.

Rating

This is the Equipment Rating, an optional information of maximum 10 alphanumeric characters.

Meter ID

This is the Equipment's Meter identifier, an optional information of maximum 16 alphanumeric characters. It must exist in the directory of Meters.

Meter Unit

This is Equipment's Meter measurement unit, a read-only information automatically managed by the system.

A selector trigger button (or F2 key) linking to Meter Selector is available.

Right-mouse click (or F7 key) will activate the Meter Details window for the current code.

MTBF

This is the Equipment's Medium Time Before Failure, an optional positive numeric value.

MTBF Unit

This is the MTBF measurement unit, an optional information of maximum 5 alphanumeric characters.

MTTR

This is the Equipment's Mean Time To Repair, an optional positive numeric information.

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MTTR Unit

This is the MTTR measurement unit, an optional information of maximum 5 alphanumeric characters.

Registration No

This is the registration number of the equipment, an optional information of maximum 16 alphanumeric characters.

Country

This is the country of origin of this equipment. It must exist in the directory of Countries.

A selector trigger button (or F2 key) linking to Countries and Currencies Selector is available.

Right-mouse click (or F7 key) will activate the Countries and Currencies Details window for the current code.

Serial No

This is the Equipment's Serial Number, an optional information of maximum 24 alphanumeric characters.

Manufactured on month

This is the Equipment's manufacturing month index, an optional numeric information.

Manufactured on year

This is the Equipment's manufacturing year, an optional numeric information.

Arrival Date-month

This is the Equipment's arrival month index, an optional numeric information.

Arrival Date-year

This is the Equipment's arrival year, an optional numeric information.

Min Life-year

This is the Equipment's minimum expected life, specified in terms of years, an optional numeric information.

Min Life-month

This is the Equipment's minimum expected life, specified in terms of months, an optional numeric information.

Min Life-meter

This is the Equipment's minimum expected life, specified in terms of meter units, an optional numeric information.

Max Life-year

This is the Equipment's maximum expected life, specified in terms of years, an optional numeric information.

Max Life-month

This is the Equipment's maximum expected life, specified in terms of months, an optional numeric information.

Max Life-meter


This is the Equipment's maximum expected life, specified in terms of meter units, an optional numeric information.

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4.6.1 To Create a Technical Specification for an Equipment

Minimum information required to add specifications to an Equipment, is:

- Equipment code

Click on the  icon to launch the ADD window.

4.6.2 To Modify a Technical Specification of an Equipment


The only information that cannot be modified, is:

- Equipment code

Click on the  icon to save the modification made.

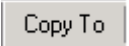
4.6.3 To Delete a Technical Specification of an Equipment

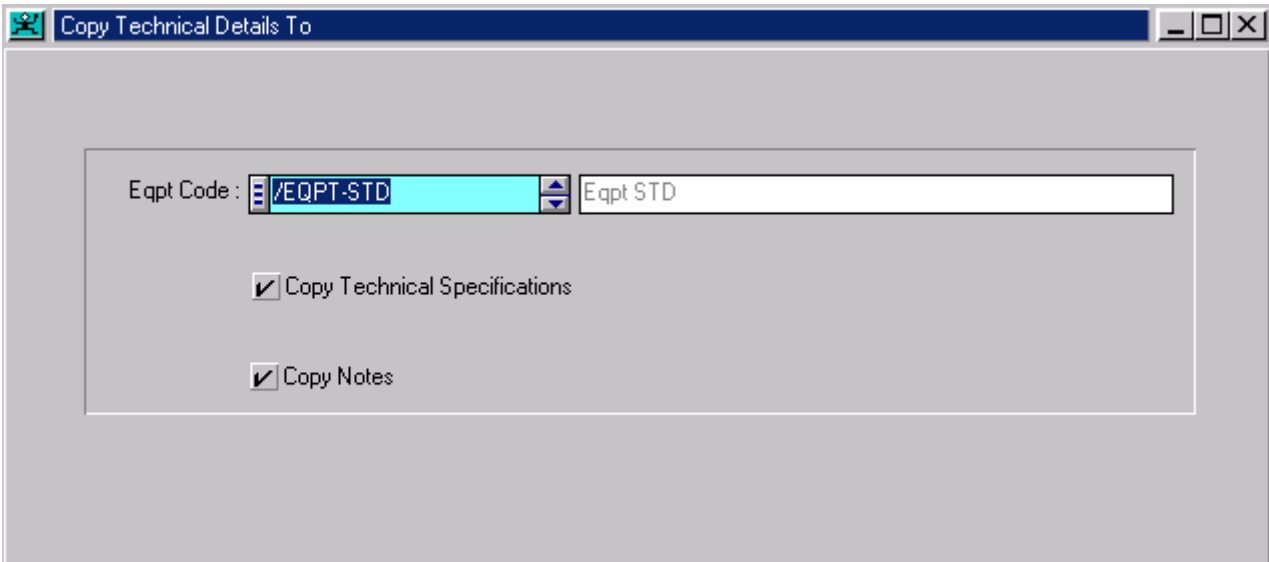
There is no restrictions in deleting the Technical Specification of an Equipment.

Click on the  icon to delete the current Meter.

4.6.4 To Copy the Technical Specifications to another Equipment

Select the source equipment to copy from at the Technical Specification Details window.

Click on the non-standard  button and the following window appears:



The screenshot shows a window titled "Copy Technical Details To". Inside the window, there is a section with the following elements:

- A label "Eqpt Code :" followed by a dropdown menu showing "/EQPT-STD" and a text box containing "Eqpt STD".
- A checked checkbox labeled "Copy Technical Specifications".
- A checked checkbox labeled "Copy Notes".

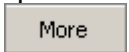
Specify the target equipment to copy to at the **Equipment** field of the Copy Technical Details window.

If **Copy technical specifications** checkbox is checked, specifies that the specification details of the source Equipment will be copied to the destination Equipment.

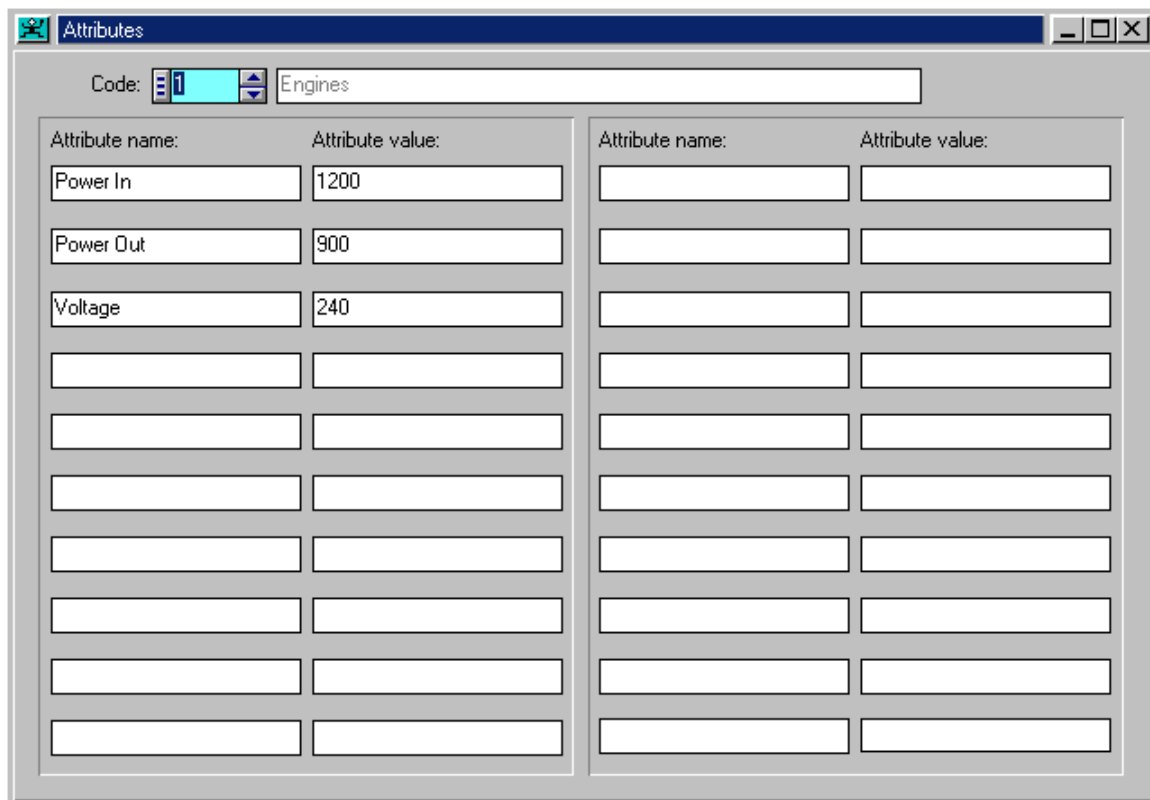
If **Copy notes** checkbox is checked, specifies that the specification attributes of the source Equipment will be copied to the destination Equipment.

4.6.5 To View/Update the Technical Specification Attributes for Equipment

The purpose of this window is to display the Technical Specifications Attributes for equipment.

Select the equipment to copy from at the Technical Specification Details window. Click on the non-standard  button and the attributes details of the equipment appears:

The Attribute Details window looks by default as follows:



Detailed Field Descriptions:

Code

This is the specification attributes class identifier, a mandatory positive integer information. It must exist in the directory of Attribute Classes, which is managed through the COSWIN Configuration's Global / Spec. Attributes.

Code descriptions

This is the specification attributes class description, a read-only information automatically managed by the system.

Specifications Attributes List Box

Attribute Name	The Specification Attribute identifier.
Attribute Value	The Specification Attribute value.

4.7 QUERY BY ATTRIBUTES

Path: Maintenance / Equipment Register / Technical / Query by Attributes

This module allows the user to search through the database for equipment instances satisfying certain topographical and/or technical criteria. The result is a list of equipment instances satisfying all the given conditions. These equipment instances can be viewed or listed. You can even select from these equipment instances one or more to display several technical details. This module works as a filtering tool.

Select from COSWIN menu *Maintenance / Equipment Register / Technical / Specifications* to launch the Technical Specification module.


The Query By Attributes Details window looks by default as follows:


The screenshot shows the 'QBA Details' window. It features a search criteria section with fields for 'Eqpt Code', 'Zone', 'Function', 'Category', 'Model No', and 'Serial No', each with a 'From' and 'To' input box. Below these are checkboxes for 'Case sensitive' and 'Ignore Attributes Values'. A 'More' button is also present. At the bottom, there is a table with columns: ID, Class, Attribute, Op., and Value. The table is currently empty.

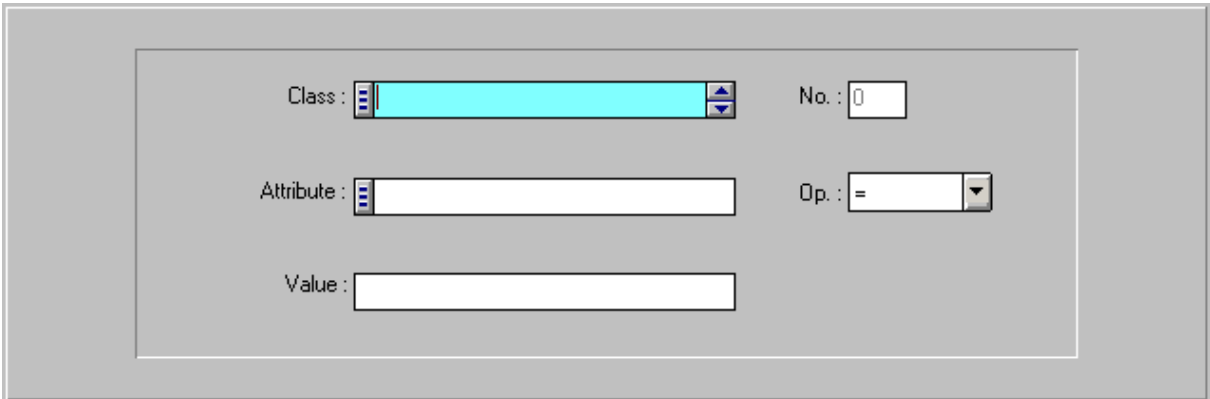
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The following search options are provided:

- By range of **Equipments**
- By range of **Zones**
- By range of **Functions**
- By range of **Categories**
- By range of **Model Numbers**
- By range of **Serial Numbers**

To clear the criteria entered into the window, click on the non-standard  button.

To add search criteria based on item attributes, click into the attribute list box window and press the  button. The following window appears:



Detailed Field Descriptions:

Class

Indicate the class of the attributes.

No

Display the class number of the attribute class selected.

Attribute

Indicate the particular attribute to be test condition.


Operator

This is the operator used in comparing the attribute value. Available options are

- = Equal to the value.
- >= Superior or equal to the value.
- <= Inferior or equal to the value.
- # Not the same as the value.
- \$ Contains the "value" character string.



Value


Indicate the value to compare with the selected attribute.


To clear the attribute-based criteria entered into the window, click on the non-standard  button.

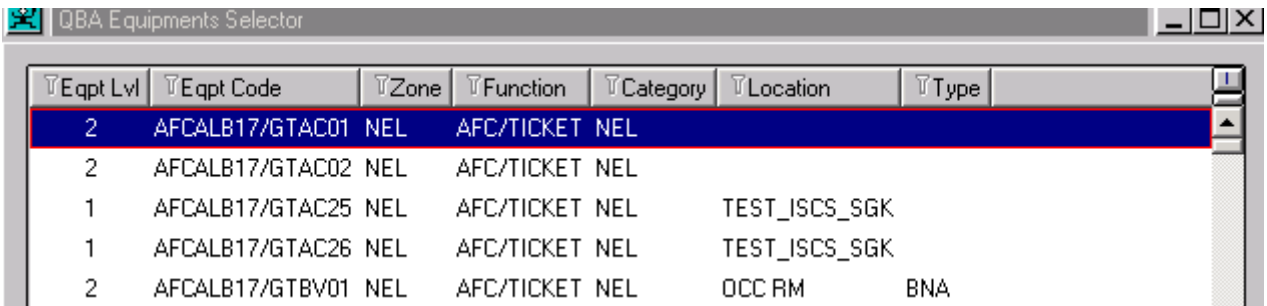
If the Case Sensitive checkbox is checked, the system will respect the case of the attribute values entered and search only for the equipments whose attribute values are of the same case.

If the Ignore Attributes Values checkbox is checked, the system will ignore the attribute-based criteria when searching.

After specifying the criteria, click the  button to save, and the  button to return to the window.

Once all the criteria have been defined, click on the non-standard  button to begin the search.

Once system returns with the search result, click on the non-standard  button to view the selected list:



T Eqt Lvl	T Eqt Code	T Zone	T Function	T Category	T Location	T Type
2	AFCALB17/GTAC01	NEL	AFC/TICKET	NEL		
2	AFCALB17/GTAC02	NEL	AFC/TICKET	NEL		
1	AFCALB17/GTAC25	NEL	AFC/TICKET	NEL	TEST_ISCS_SGK	
1	AFCALB17/GTAC26	NEL	AFC/TICKET	NEL	TEST_ISCS_SGK	
2	AFCALB17/GBV01	NEL	AFC/TICKET	NEL	OCC RM	BNA

NOTE:

You may add as many criteria you want:

- On the **same attribute** (for example superior to or inferior to)
- On **several attributes** of a same class
- On attributes from **different classes**

System will search for items that satisfy **all** the stated criteria and return them as result.

4.8 LIST OF SPARES

Path: Maintenance / Equipment Register / Technical / List of Spares

Certain critical equipment must be in continuous operation for the smooth running of the plant. For such equipment, some minimum maintenance spare must always be stocked to provide quick recovery when equipment breakdowns.

List of such spares and its minimum stocked quantity, may be provided by the equipment manufacturer, or the user may build them up based on past experiences.

This module provides the option to define such spares. It is also possible to automatically build the equipment spares based on Stock Usage feedback in Work Order Details module.

Minimum spares list can include both stock items and non-stock items. It is possible to define complete details of a non-stock item without losing the context. You can define any number of spare items for any equipment.

Select from COSWIN menu *Maintenance / Equipment Register / Technical / List of Spares* to launch the List of Spares Details module.

The List of Spares Details window looks by default as follows:

The screenshot shows the 'List of Spares' window. At the top, there's a search bar with 'Eqpt Code' and a dropdown menu showing '/EQPT-STD'. Below this is a table with columns: 'Item Code', 'Stock/Non-Stock', 'Group', 'Min Qty', 'Used Qty', 'UOM', and 'Description'. The first row shows 'AMS/ELE/LP/05', 'S', 'AMS', '0.', '0. UNIT', and 'LOCAL STATUS PANEL'. At the bottom, there is a 'Copy' button and a section with 'Eqpt Code' and 'Description' fields, both containing the same values as the search bar.

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Detailed Field Descriptions:

Equipment Code

This is the Equipment identifier, for which the List of Spare items is provided, a mandatory information. It must exist in the directory of Equipments or Groups of Equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Equipment description

This is the Equipment description, a read-only information automatically managed by the system.

Spares List Box

Item Code	The item identifier.
S/NS	This flag specifies if the item is a stock (S) or non-stock item.
Group	The spare's group identifier.
Min Qty	This is the minimum quantity of items to be added in the equipment list of spare items.
UOM	This is the item measurement unit (if any).
Used Qty	This is the actually used quantity from the current item, during the execution of Work Orders for the Equipment.
Description	This is the date when the item was last used during a Work Order execution.

Double click on any of the spare record will present the selected record in the **List of Spare Details** window.

Spare description

This is the item description, a read-only information automatically managed by the system.

Last Used

This is the finish date for the last completed Work Order (if any) which used the selected item, a read-only information automatically managed by the system.

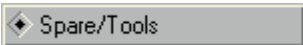
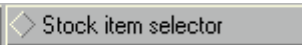
4.8.1 List of Spares Details

Detailed Field Descriptions:

Equipment Code

This is the equipment identifier.

Item Source

This radio button   specifies the source, from which the spare is to be selected.

Spare/Tools From Spare / Tools directory

Stock item selector From Stock Items directory

Item Code

This is the item identifier, in the equipment list of spare items, a mandatory information of maximum 16 alphanumeric characters.

A selector trigger button (or F2 key) linking to Spare/Tools Selector or Stock Item Selector is available.

Item Description

This is the description of the spare item.

Stock/Non-Stock

This information specifies if the item is a stock ("S") or non-stock item ("N")..

Group

This is the spare's group identifier.

Min Qty

This is the minimum quantity of items to be added in the equipment list of spare items, an optional positive numeric information.

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Used Qty

This is the quantity of the item actually used during work orders execution. It is updated when the work orders are archived.

Last Used

This is the date when item was last used in a list of spares, during a Work Order execution.


UOM

This is the item measurement unit (if any).

4.8.1.1 To Add an Item to Equipment List of Spares

Minimum information required to add an item to an equipment list of spare, is:

- Item identifier

Click on the  icon to launch the ADD window.

4.8.2 To Modify an item in the Equipment List of Spares

The only information that can be modified is:

- Minimum Quantity

4.8.3 To Delete an Item from the Equipment List of Spares

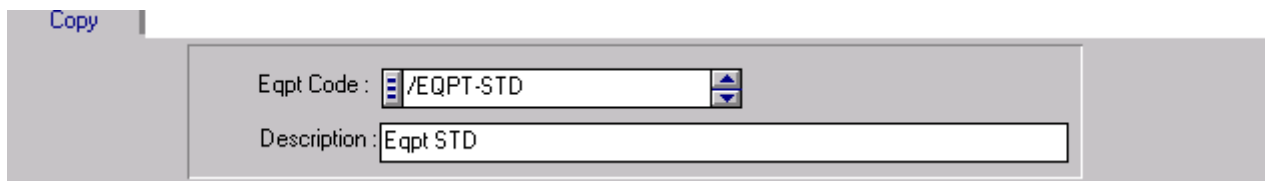
Item can be deleted from the Equipment List of Spares without restriction.

Click on the  icon to delete the current item from Equipment List of Spares.

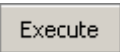
4.8.4 To Copy the List of Spares from another Equipment

Select the source equipment to copy from at the **Equipment** field of List of Spares window.

Select the target equipment to copy to at the Equipment field in the Copy tab of the List of Spares window.



You may select only certain items (with the mouse or F9 key).

Execute the copy process by clicking on the non-standard  button.

4.9 MANUALS AND DRAWINGS

Path: Maintenance / Equipment Register / Technical / Manuals and Drawings

Technical Drawings and Manuals aid in understanding the operation of an equipment and its maintenance activities. This module helps you to maintain data on the component, assembly drawings, operations and maintenance/service manuals of various equipments.

It allows us to centralise the data related to the technical documentation of a piece of equipment:

- Maintenance manuals
- Plans etc.

Select from COSWIN menu *Maintenance / Equipment Register / Technical / Manuals and Drawings* to launch the Manuals and Drawings Details module.

The Manual and Drawing Details window looks by default as follows:

Draw Details

Eqpt Code : AFCCNTB1/SRCS08E CSC Module

TNumber	TDate	TVersion	TLocation	TDescription
DXR-012	20/06/2001	2.1		Schema Diagram 012

Description : Schema Diagram 012

Detailed Field Descriptions:

Equipment code

This is the Equipment identifier, a mandatory information of maximum 16 alphanumeric characters. It must exist in the directory of Equipments or Groups of equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Equipment description

This is the equipment description, a read-only information automatically managed by the system.

Drawings List Box

Number	This is the manual / drawing number.
Date	This is the date on which manual / drawing was prepared.
Version	This is the manual / drawing version.
Location	This is the manual / drawing location.

Double click on any of the drawing records in the list box will present the selected record in the **Draw Items Details** window

Description

This is the Manual / Drawing description, a read-only information automatically managed by the system.

4.9.1 Draw Items Details

The Draw Items Details window looks by default as follows:

The screenshot shows a window titled "Draw Items Details". Inside the window, there are five labeled text input fields arranged vertically:

- Number :** The field contains the text "DXR-012".
- Description :** The field contains the text "Schema Diagram 012".
- Version :** The field contains the text "2.1".
- Location :** The field is empty.
- Date :** The field contains the text "20/06/2001".

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Detailed Field Descriptions:

Number

This is the equipment manual or drawing identifier, a mandatory information of maximum 30 alphanumeric characters. It must be unique among all Equipments.

Description

This is the equipment manual or drawing description, an optional information of maximum 30 alphanumeric characters.

Date

This is the equipment manual / drawing creation or last updating date, an optional information.

Version

This is the equipment manual / drawing version, an optional information of maximum 8 alphanumeric characters.


Location

This information provides data about equipment manual / drawing location, an optional information of maximum 8 alphanumeric characters.

4.9.2 To Add a New Manual/Drawing to an Equipment

Minimum information required to add a manual / drawing for an equipment is:

- Serial Number of manual / drawing

Click on the  icon to launch the ADD window.

4.9.3 To Modify a Manual/Drawing of an Equipment

The only information that cannot be modified is:

- Serial Number of manual / drawing
- Description of manual / drawing

4.9.4 To Delete a Manual/Drawing from an Equipment

Manuals / drawings for an equipment can be deleted without restrictions.

Click on the  icon to delete the current Manual/Drawing.

4.10 SAFETY DO & DONT'S

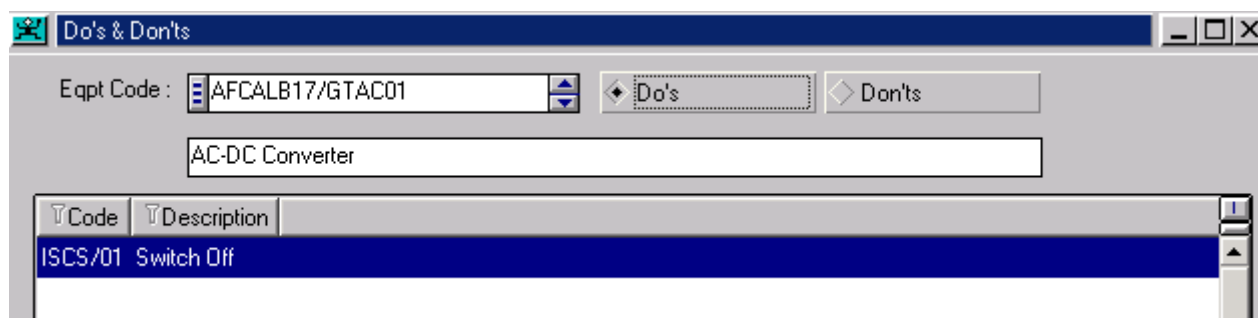
Path: Maintenance / Equipment Register / Technical / Do & Dont's

Any equipment has certain norms or restrictions of usage. When Work Orders are released, the maintenance personnel is required to be informed about these norms and restrictions.

This module captures the information on the "Do's" and "Don'ts" of each equipment. They can be printed on the work order.

Select from COSWIN menu *Maintenance / Equipment Register / Technical / Do & Don'ts* to launch the Do's & Don'ts Details module.

The Do's & Don'ts Details window looks by default as follows:



Detailed Field Descriptions:

Equipment Code

This is the Equipment identifier, a mandatory information of maximum 16 alphanumeric characters. It must exist in the directory of Equipments or Groups of Equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Equipment description

This is the equipment description, a read-only information automatically managed by the system

Indications

This radio button specifies which specifications will be listed:

DOs	Mandatory specifications will be listed (norms).
DON'Ts	Forbidden specifications will be listed (restrictions).

Indications List Box

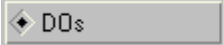

Code	The restriction / norm identifier.
Description	The restriction / norm description.

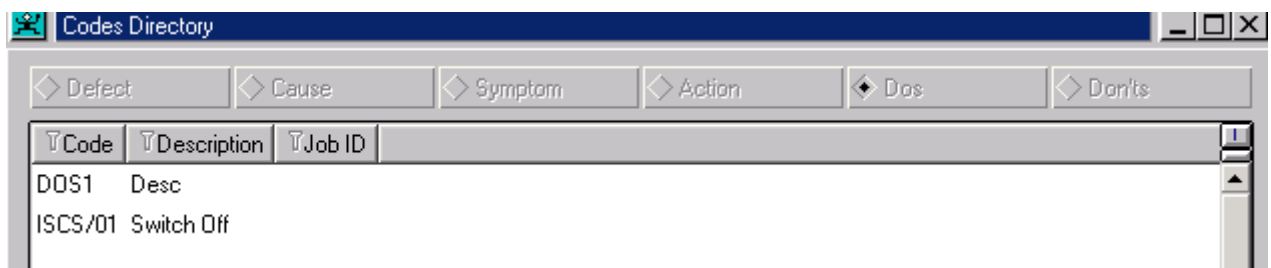
4.10.1 To Add Norms / Restrictions to an Equipment

The minimum information required to add a norm / restriction is:

- Norm / Restriction identifier

To add Restrictions / Norms,

1. Select the appropriate radio button   for the type of codes to be added. **DO** for norm codes and **DON'TS** for restriction codes.
2. Click on the non-standard  button to select the codes from the selector displayed:



3. Confirm the selection by clicking on the  icon.

4.10.2 To Delete a Norm / Restriction from an Equipment

Norms / Restrictions for an equipment can be deleted without restrictions.

Click on the  icon to delete the current Norm/Restriction.

4.11 DIAGNOSTIC CODES MANAGEMENT

Path: Maintenance / Equipment Register / Defects

Providing feedback on defects for both preventive and corrective maintenance will help to analyse the functioning of equipment more accurately. This will result in carrying out more effective maintenance in future.

You can provide defect feedback against a Work Order. But, on certain occasions, you have noticed a defect on equipment and corrected it without generating a Work Order.

This module manages the defect feedback on the equipment. The defect details, including Symptom, Cause and Action taken for rectifying the defect, may be captured through a work order or user may report these incidents directly to the module. Since these feedbacks are in terms of various codes, any future analysis provides valuable information regarding the functioning of equipment. You can also analyse the various defects recorded, their frequency, symptoms and causes behind them and actions taken.

Select from COSWIN menu *Maintenance / Equipment Register / Defects* to launch the Equipment Defects module.

The Equipment Defect Details window looks by default as follows:

The screenshot shows the 'Equipment Defects' window. At the top, there is a title bar with the text 'Equipment Defects'. Below the title bar, there are two input fields: 'Eqpt Code' with the value 'AFCALB17/GTAC26' and 'Description' with the value 'ADD EQPT'. Below these fields, there are two tabs: 'Details' (selected) and 'Tree'. The 'Details' tab displays a table with the following columns: 'TDate', 'TSymptom', 'TDefect', 'TCause', 'TAction', 'TWO ID', 'TDuration', 'Dir.', and 'Catg.'. The table contains one row of data: '08/05/2002', 'ISCS/05', 'TRACK/01', 'ISCS/02', 'ACTION', '13160'. Below the table, there are four input fields: 'S:' with the value 'Fail to Function', 'D:' with the value 'Turnout failed (TMS)', 'C:' with the value 'Short Circuit', and 'A:' with the value 'Action desc'.

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Detailed Field Descriptions:

Equipment Code

This is the Equipment identifier, a mandatory information. It must exist in the directory of Equipments or Groups of equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Description

This is the Equipment description, a read-only information automatically managed by the system.

Defects List Box

Date	This is the date of the Defect incidence.
Symptom	This is the Defect Symptom identifier.
Defect	This is the Defect identifier.
Cause	This is the Defect Cause identifier.
Action	This is the Defect Action identifier.
Duration	This is the duration while the equipment was stopped, because of the defect.
WO ID	This is the Work Order against which the event is recorded.

Click on any of the displayed defect records in the list box will open the selected record in **Equipment Defect Feedback Details** window.

S :

This is the Symptom description for the current Defect, a read-only information automatically managed by the system.

D :

This is the Defect description for the current Defect, a read-only information automatically managed by the system.

C :

This is the Cause description for the current Defect, a read-only information automatically managed by the system.

A :

This is the Action description for the current Defect, a read-only information automatically managed by the system.

4.11.1 Equipment Defect Feedback Details

The Equipment Defect Details window looks by default as follows:

Detailed Field Descriptions:

Equipment/Group Code

This is the Equipment's identifier or Equipment Group's identifier, a read-only information automatically managed by the system.

Date

This is the defect's acknowledgement or lasts updating date, a mandatory information.

SDCA Selection Criteria

This radio-button specifies the selection pool for Symptoms / Defects / Causes / Actions.

- | | |
|-----------------------|------------------------------|
| Directory wise | Select from Defects Selector |
| Category wise | Select from Codes Directory |

Symptom

This is the Defect Symptom identifier, an optional information. It must exist in the directory of Symptom Codes.

Symptom description

This is the Defect's Symptom description, a read-only information automatically managed by the system.

Defect

This is the Defect identifier, an optional information. It must exist in the directory of Defect Codes.

Defect description

This is the Defect's description, a read-only information automatically managed by the system.

Cause

This is the Defect Cause identifier, an optional information. It must exist in the directory of Cause Codes.

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Cause description

This is the Defect's Cause description, a read-only information automatically managed by the system.

Action

This is the Defect remedy Action identifier, an optional information. It must exist in the directory of Action Codes.

Action description

This is the Defect's Action description, a read-only information automatically managed by the system.

Duration

This is the duration of the equipment stopping in terms of hours, due to the defect, an optional numeric information.

Time

This is the moment of defect appearance, an optional numeric information.

Meter Level

This is the meter level for the equipment defect attached Work Order, at the Work Order archiving operation, if Work Order had a meter level, a read-only information automatically managed by the system.

WO ID

This is the Work Order identifier attached to the equipment defect, a read-only information automatically managed by the system.

Maintenance Cost


This is the cost of the Work Order attached to the equipment defect, a read-only information automatically managed by the system.

4.11.2 To Add a Defect Feedback

Minimum information required is:

- Defect's date

First, select the equipment whose defect incident to be reported at the **Equipment** field.

Click on the  icon to launch the ADD window.


4.11.3 To Modify an existing Defect Feedback

The only information that can be modified is:

- Symptom
- Defect
- Cause
- Action
- Duration
- Time

4.11.4 To Delete an existing Defect Feedback

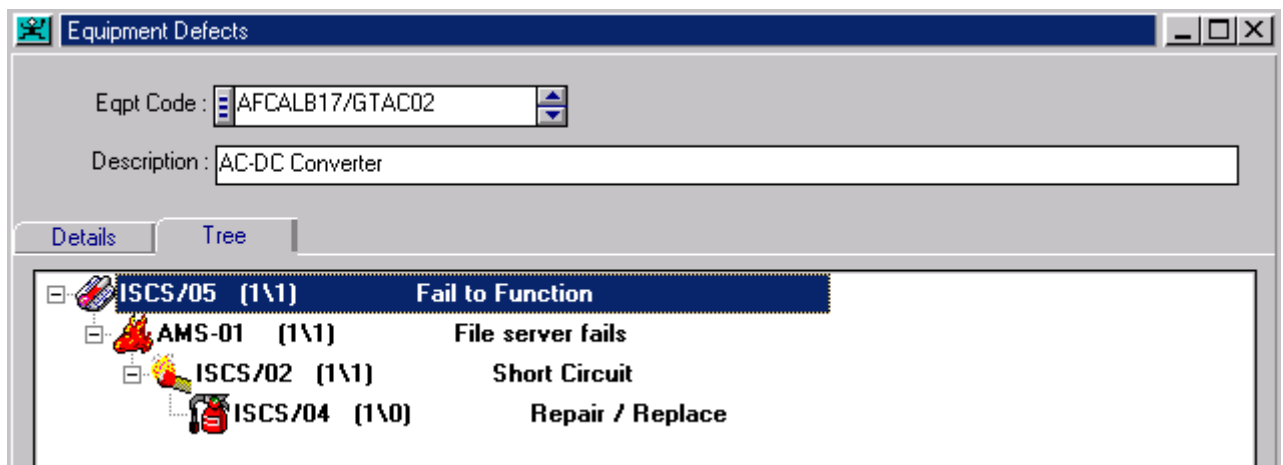
A Defect cannot be deleted if there is a Work Order attached to the defect (even if the Work Order was archived and deleted).

Click on the  icon to delete the current Defect Feedback or on the non-standard button to delete several feedbacks at one time.

Batch DEL

4.11.5 To View Graphical Visualisation of the Defects

Click on the Tree tab and a graphical representation of the defects will be displayed:



4.12 DIAGNOSTIC CODES ENQUIRIES

COSWIN provides a few modules to view the analysis on defect feedback of the equipment.

4.12.1 To Display Defects per Category

Path: Maintenance / Equipment Register / Displays / Defects for Category

The purpose of this module is to view a complete list of defects and incidences reported on a specific Equipment Category. The defect details are displayed in the chronological order, latest defect first and followed by earlier defects.

Select from COSWIN menu *Maintenance / Equipment Register / Displays / Defects for Category* to launch the Defects for Category Details module.

The Defects for Category Details window looks by default as follows:

TReport Date	TSymptom	TDefect	TCause	TAction	TDuration	TEqpt/Group Code	TEqpt Lvl	TZor
02/03/2002	ISCS/05	AMS-03	ISCS/02	ISCS/04		SIGNED1119/ASCV0021	1 NEL	
02/03/2002	ISCS/05	AMS-01	ISCS/02	ISCS/04	2.00	EMU001TRN/XXXXXXXX	1 NEL	
02/03/2002	ISCS/05	AMS-01	ISCS/02	ISCS/04		EMU101CAR/XXXXXXXX	2 NEL	
15/03/2002	ISCS/05		ISCS/02	ISCS/04		MEQP-001	1 CQY	
15/03/2002	ISCS/05	AMS-02	TRACK/03	ISCS/04		MEQP-001	1 CQY	
15/03/2002	ISCS/05	AMS-03	ISCS/02	ISCS/04		MEQP-001	1 CQY	
18/03/2002	ISCS/05	AMS-02	ISCS/02	ISCS/04		EMU001TRN/XXXXXXXX	1 NEL	
26/03/2002	ISCS/05					EQPT	1 NEL	

S: Fail to Function D: DG fails
C: Short Circuit A: Repair / Replace

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Detailed Field Descriptions:

Category

This is the Category identifier, a mandatory information that can take up to 10 alphanumeric characters. It must exist in the directory of categories.

A selector trigger button (or F2 key) linking to Categories Selector is available.

Right-mouse click (or F7 key) will activate the Category Details window for the current code.

Category description

This is the Equipment Category description, a read-only information automatically managed by the system.

Ordering

This radio button specifies the order criteria of incidences / defects:

Symptom	Ordered by Symptom criteria
Defect	Ordered by Defect criteria
Cause	Ordered by Cause criteria
Action	Ordered by Action criteria

Defects List Box

Symptom	This is the Defect Symptom identifier
Defect	This is the Defect identifier
Cause	This is the Defect Cause identifier
Action	This is the Defect Action identifier
Duration	This is the duration of the event, in hours
Eqpt Lv	This is the level of the Equipment/Group in its structure
Eqpt/Group Code	This is the Equipment / Group identifier
Zone	This is the Equipment Zone identifier
Report date	Date information for the date of the report of the incidence (Defects, Symptoms, Causes and Actions)

Symptom

This is the Symptom description for the current Defect, a read-only information automatically managed by the system.

Defect

This is the Defect description for the current Defect, a read-only information automatically managed by the system.

Cause

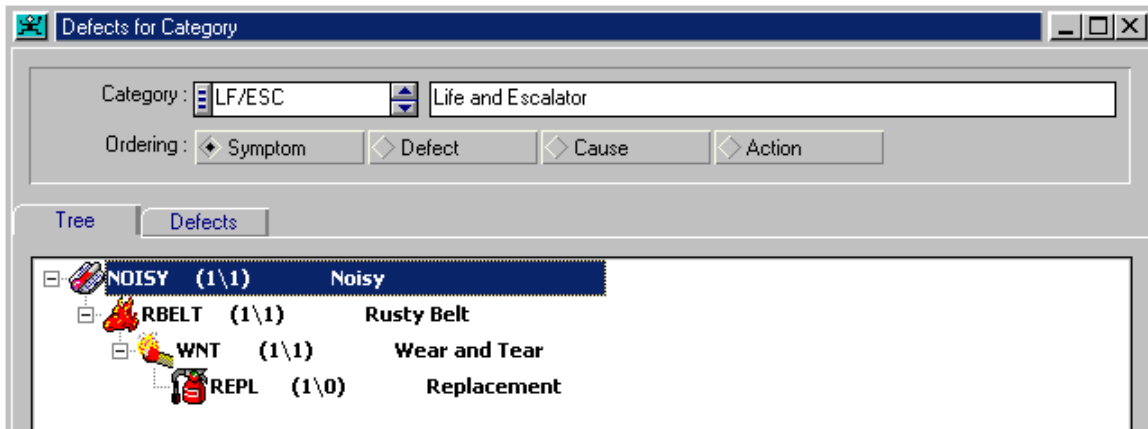
This is the Cause description for the current Defect, a read-only information automatically managed by the system.

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Action

This is the Action description for the current Defect, a read-only information automatically managed by the system.

- It is possible to sort the list of the breakdowns by selecting the respective radio buttons at
☒ Symptom ☐ Defect ☐ Cause ☐ Action
- Graphic visualisation of these defects can be viewed under the Tree tab:



4.12.2 To Display Defects per Equipment

Path: Maintenance / Equipment Register / Displays / Defects for Equipment

The purpose of this module is to provide a list defects and incidences reported on specific equipment. The defect details are displayed in the reverse chronological order.

Select from COSWIN menu *Maintenance / Equipment Register / Displays / Defects for Equipment* to launch the Defects for Equipment/Group Details module.

The Defects for Equipment/Group Details window looks by default as follows:

TReport Date	TSymptom	TDefect	TCause	TAction	TDuration	TWID ID	Interval	TWID Cost
08/05/2002	ISCS/05	ISCS/00	TRACK/03	ISCS/04		13062	8	
30/04/2002	ISCS/05	AMS-01	ISCS/02	ACTION		12920	0	9.00
30/04/2002	ISCS/05					12920	0	9.00

S : Fail to Function
D : Component burned
C : Backup Hard Drive (TMS)
A : Repair / Replace

Detailed Field Descriptions:

Eqpt/Group Code

This is the Equipment identifier, a mandatory information. It must exist in the directory of Equipments or Groups of equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Eqpt/Group description

This is the Equipment / Group description, a read-only information automatically managed by the system.

Defects List Box

Symptom	This is the Defect Symptom identifier
Defect	This is the Defect identifier
Cause	This is the Defect Cause identifier
Action	This is the Defect Action identifier
Duration	This is the duration of the event, in hours
Interval	This is the interval between two successive events in terms of days
WO ID	This is the Work Order against which the event is recorded
WO Cost	This is the cost of repair for the event
Report date	This is the date when the event was reported

Symptom

This is the Symptom description for the current Defect, a read-only information automatically managed by the system.

Defect

This is the Defect description for the current Defect, a read-only information automatically managed by the system.

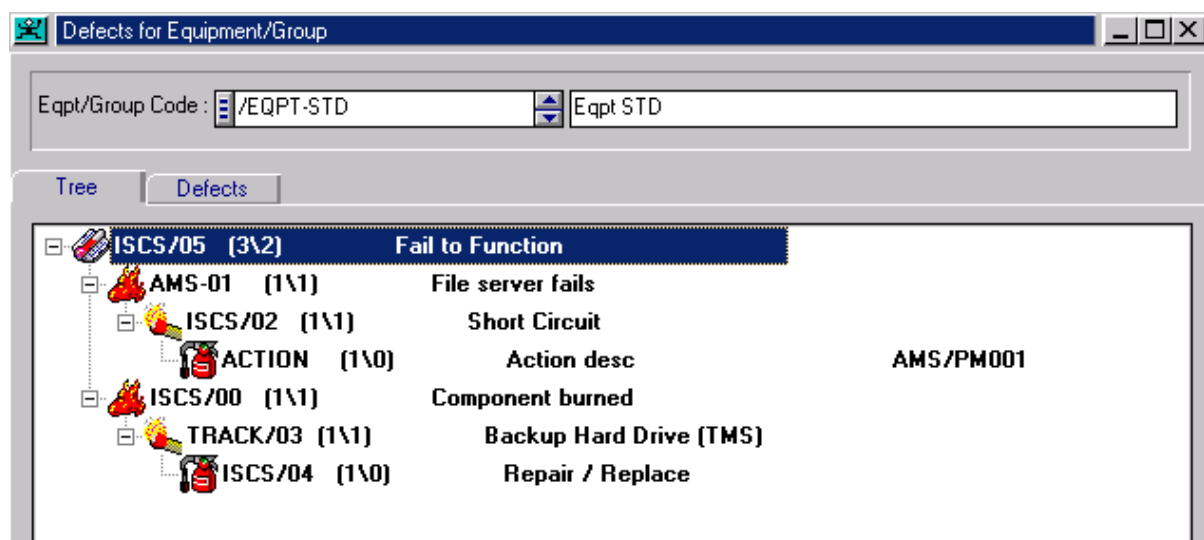
Cause

This is the Cause description for the current Defect, a read-only information automatically managed by the system.

Action

This is the Action description for the current Defect, a read-only information automatically managed by the system.

Graphic visualisation of these defects can be viewed under the Tree tab:



4.12.3 To Display Equipments in Category

Path: Maintenance / Equipment Register / Display / Equipment in category

The purpose of this module is to provide the list of similar equipment instances in the plant along with other details like their location and supplier details. This is achieved based on the category identifier, which is used to group and identify similar equipment under one category code.

Select from COSWIN menu *Maintenance / Equipment Register / Displays / Equipments in Category* to launch the Equipments in Category Details module.

The Equipments in Category Details window looks by default as follows:

Eqpt Lvl	Eqpt Code	Description	Zone	Function	Category	TC
0	TRAIN/ALLTRAINS	All Trains (1 to 25)	NEL	NEL	NEL	2712
1	EMU001TRN/XXXXXXXX	Train Number 1	NEL	TRAIN/BD	NEL	2712
2	EMU101CAR/XXXXXXXX	Car Number 71001	NEL	TRAIN/BD	NEL	2712
3	EMU101BO1/XXXXXXXX	Trailer bogie - Extreme bogie DT with WL	NEL	TRAIN/BO	NEL	2712
4	EMU101BO1/TAXLXXX1	Axle (Trailer) [complete wheelset]	NEL	TRAIN/BO	NEL	2712
5	EMU101BO1/DF55XXXA	Tread Brake Unit With Parking Brake	NEL	TRAIN/TB	NEL	2712
5	EMU101BO1/DX55XXXB	Tread Brake Unit Without Parking Brake	NEL	TRAIN/TB	NEL	2712
4	EMU101BO1/TAXLXXX2	Axle (Trailer) [complete wheelset]	NEL	TRAIN/BO	NEL	2712
5	EMU101BO1/DF55XXXB	Tread Brake Unit With Parking Brake	NEL	TRAIN/TB	NEL	2712
5	EMU101BO1/DX55XXXA	Tread Brake Unit Without Parking Brake	NEL	TRAIN/TB	NEL	2712
4	EMU101BO1/WFLXXXB	Wheel Flange lubricators (Left)	NEL	TRAIN/BO	NEL	2712
4	EMU101BO1/WFLXXXA	Wheel Flange lubricators (Right)	NEL	TRAIN/BO	NEL	2712
3	EMU101BO2/XXXXXXXX	Trailer bogie - Intermediate bogie DT	NEL	TRAIN/BO	NEL	2712
4	EMU101BO2/TAXLXXX1	Axle (Trailer) [complete wheelset]	NEL	TRAIN/BO	NEL	2712

Model Number :

Detailed Field Descriptions:

Category

This is the Category identifier, a mandatory information that can take up to 10 alphanumeric characters. It must exist in the database, in the directory of categories.

You can select the Category from the Categories Selector by pressing **F2** key or the selector button.

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Pressing **F7** key or the mouse right button activates the Category Details window for the current code.

Category description

This is the Category description, a read-only information automatically managed by the system.

Equipment List Box

Eqpt Lvl	This is the level of the Equipment in its structure
Eqpt Code	This is the Equipment identifier
Description	This is the Equipment description
Bar Code	This is the Equipment Bar Code
Zone	This is the Equipment's Zone identifier
Function	This is the Equipment's Function identifier
Cost Centre	This is the Equipment's Cost Centre identifier
Category	This is the Equipment's Category identifier
Phone	This is the Equipment's nearest phone
Parent Eqpt	This is the Equipment Parent identifier (in Equipment's structure)
System Eqpt	This is the Equipment System identifier (in Equipment's structure)
Last Update	This is the Equipment creation or last updating date
Item Code	This is the Equipment Item equivalence

Model Number

This is the Model Number of the currently selected equipment at the Equipment List Box, a read-only information automatically managed by the system.

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4.13 FINANCIAL PURCHASE ORDER

Path: Maintenance / Equipment Register / Financial / Purchase Order

The purpose of this window is to provide details upon Equipment's acquisition. Each equipment can has only one Financial Purchase Order.

Select from COSWIN menu *Maintenance / Equipment Register / Financial / Purchase Order* to launch the Financial Purchase Order module.

The Financial Purchase Order Details window looks by default as follows:

Detailed Field Descriptions:

Eqpt Code

This is the Equipment identifier, for which Financial Purchase Order information is provided, a mandatory information. It must exist in the directory of Equipment register or Groups of equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

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Description

This is the Equipment description, a read-only information automatically managed by the system.

Order Reference

This is the Equipment acquisition Order identifier, a mandatory information of maximum 10 alphanumeric characters.

Order Date

This is the Equipment acquisition Order date, an optional information.

Order Value

This is the Equipment acquisition Order value (in the default set currency), a mandatory positive numeric information.

Order Confirmation Ref.

This is the Equipment acquisition Order confirmation identifier, a mandatory information of maximum 20 alphanumeric characters.

Order Confirmation Date

This is the Equipment acquisition Order confirmation identifier, a mandatory information.

Supplier Ref.

This is the Equipment's Supplier identifier, an optional information. It must exist in the directory of Maintenance Suppliers.

A selector trigger button (or F2 key) linking to Maintenance Supplier Selector is available.

Right-mouse click (or F7 key) will activate the Maintenance Supplier Details window for the current code.

Supplier Name

This is the Equipment Supplier description, a read-only information automatically managed by the system.

Manufacturer Ref.

This is the Equipment's Manufacturer identifier, an optional information. It must exist in the directory of Manufacturers.

A selector trigger button (or F2 key) linking to Manufacturer Selector is available.

Right-mouse click (or F7 key) will activate the Manufacturer Details window for the current code.

Manufacturer Name

This is the Equipment Manufacturer description, a read-only information automatically managed by the system.

Lease/Hire/Purchased

This combo box specifies if the Equipment is 0-Purchased, 1-Leased or 2-Hired.

Old/New

This combo box specifies if the Equipment is 0-New or 1-old.

Expiry Date

This is the Equipment Purchase Order expiry date, an optional information.

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Project No

This is the project identifier for the Equipment's Purchase Order, an optional information of maximum 10 alphanumeric characters.

Equipment Ownership

This is identifier of the owner of the equipment. It must exist in the directory of Equipment Ownership. It is an optional information.

Notes 1

This is a supplementary information about the Equipment's Purchase Order, an optional information of maximum 30 alphanumeric characters.

Notes 2

This is a supplementary information about the Equipment's Purchase Order, an optional information of maximum 30 alphanumeric characters.

Warranty Amount

This is the Warranty Amount for the Equipment's Purchase Order, an optional positive numeric information.

Warranty Commencement Date

This is the start date of equipment's warranty period, an optional information.

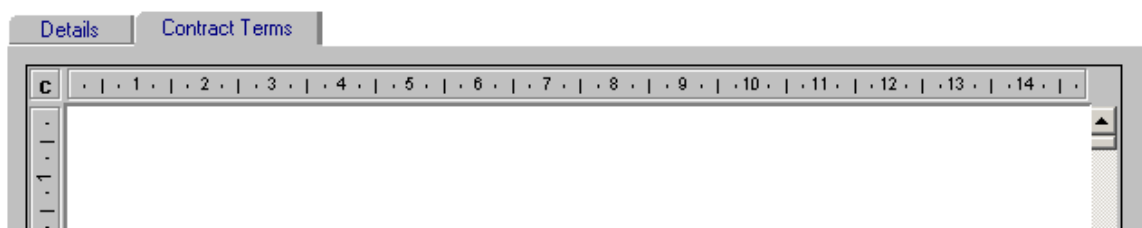
Warranty Expiry Date

This is the end date of equipment's warranty period, an optional information.

Contract Terms Tab:

This tab specifies the details of the contract (if any) pertaining to the acquisition of the equipment.

The Contract Tab of Financial Purchase Order Details window looks by default as follows:



The interface consists of the drawing layout, where the user can write text and / or append pictures, drawings, spreadsheets and any other form of OLE information.


4.13.1 To Create the Financial Purchase Order of an Equipment

Minimum information required to add financial purchase order information, for an Equipment, is:

- Equipment identifier
- Order Reference
- Order Value

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- Order Confirmation Reference
- Order Confirmation Date

Click on the  icon to launch the ADD window.


4.13.2 To Modify the Financial Purchase Order of an Equipment

The only information that cannot be modified, is:

- Equipment identifier
- Equipment description

4.13.3 To Delete the Financial Purchase Order of an Equipment

There are no deleting restrictions, for Equipment Financial Purchase Order information if it exists.

Click on the  icon to delete the current Financial Purchase Order.

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4.14 EQUIPMENT DEPRECIATION

Path: Maintenance / Equipment Register / Financial / Depreciation

Using this module, the user can maintain data on asset depreciation and run annual depreciation process. The assets to be considered for depreciation and related details like useful life of asset, depreciation method, depreciation rate, etc. can be defined using this module.

COSWIN supports the following two methods of depreciation:

Straight-line method

In this method, the asset is uniformly depreciated through its useful life span. For example, consider an asset whose useful life is 10 years and acquisition value is \$10,000. Straight line method will depreciate this asset uniformly through its life (of 10 years) at the rate of \$1,000 every year.

Reducing-rate method

In this method, an annual depreciation rate is applied to depreciate the asset. Once the asset depreciation process starts, successive year's depreciation rate is charged on the current depreciated value of the asset. Hence, by this method, the depreciation amount charged every year reduces as the machine ages. In the following example, consider an asset with a life span of 10 years, acquisition value of \$10,000, and the annual depreciation rate of 20%. As it is evident, the depreciation per year continues to reduce with the life of the asset. At some stage in its life, the annual depreciation will become too small and the asset value will never converge to zero (which will indicate that the asset has been fully depreciated). To circumvent this, in reducing rate method, every year, the depreciation amount is calculated using straight line method also. The greater of the two values is taken as the depreciation for the year. This will ensure that the asset is fully depreciated in the life span specified.

Assets will be depreciated for full year or a part of year depending on the date of commissioning of the asset and the last day in the life of the asset. On the year of purchase and commissioning, the asset will be depreciated for that part of the year during which the asset was productive. In the midyears of its life, assets will be depreciated for the whole year. Again, during the last year of the assets' life, assets will be depreciated for that part of the year which falls between the beginning of the year and the last day of the assets' life.

Example: (Straight line method)

Consider the following details for an Equipment:

Method: Linear

Acquisition Value: 3000

Commission Date: 17.11.91

Life: 3 years

Depreciate the Equipment considering its commission date:

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<u>Date</u>	<u>Depreciation Amount</u>	<u>Current Value</u>
31.12.91	123	2877
31.12.92	1000	1877
31.12.93	1000	877
31.12.94	877	000

- On 31.12.91, the equipment has been in commission for 45 days (17.11.91 to 31.12.91). Therefore, annual depreciation has been scaled down by a factor of 45/365.
- Similarly for 31.12.94, it is operative up to 16.11.94 as the life estimates.

Improvements to Asset

COSWIN provides the facility to depreciate improvement costs incurred on assets during their life period. COSWIN accepts midlife improvement, the amount spent on improvement, the date from which it has to be accounted for and increase in life of the asset due to improvement (if any).

One improvement per year can be accepted for each asset. Improvement value will also be subjected to part/full year depreciation as the case may be.

Depreciation period

When you install COSWIN and invoke depreciation process for the first time, you can enter the year up to which the assets have to be depreciated. From then onwards, successive depreciation process can be run at one-year interval only. The provision to accept the year up to which assets have to be depreciated (for the first time) is provided to facilitate the depreciation of assets that were transferred from other systems to COSWIN.

Note that COSWIN will always depreciate the assets in one of the two methods specified earlier. In case you move over to COSWIN from another system, take care to convert the method of depreciation in all assets to be one of those supported by COSWIN. COSWIN will always depreciate the asset from commissioning date, irrespective of whether the asset has been depreciated by the previous system or not. This is essential to maintain the integrity of COSWIN database.

This also means that when establishing data of assets using this module, you must take care to enter the original acquisition value of the asset and NOT the current depreciated value. The current depreciated value is always computed by COSWIN after the initial entry of equipment details.

Hence, the depreciation period will normally be one year, except during the first run, when you can give a different depreciation time period (i.e. the year up to which assets have to be depreciated). In succeeding years, depreciation will be carried out for the financial year.

Rate of Depreciation

Straight-line method: The rate is computed by the system by dividing 100 by the life of the asset (i.e. allocating 100 percent of asset value uniformly over asset's life time). This computed value will be displayed and you can not modify it.

Reducing-rate method: you can enter the annual depreciation rate for the asset. Alternatively, you can leave it to the system to compute suitable depreciation rate. To facilitate this, a table of asset life period and a coefficient (to be used for rate computation) need to be defined in the **Depreciation** option in COSWIN Configuration's Maintenance module.

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Select from COSWIN menu *Maintenance / Equipment Register / Financial / Depreciation* to launch the Depreciation Details module.

The Depreciation Details window looks by default as follows:

Detailed Field Descriptions:

Eqpt Code

This is the Equipment identifier, for which Depreciation information is provided, a mandatory information. It must exist in the directory of Equipment or Groups of equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Description

This is the Equipment description, a read-only information automatically managed by the system.

Commission Date

This is the date of commissioning of the asset, i.e. the date on which the asset became operational and can be considered as starting date for depreciation, a mandatory information.

Acquisition Value

This is the Acquisition/Purchase value of the asset, a mandatory positive numeric information.

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Salvage Value

The expected salvage value on selling / disposing of the asset, an optional numeric information.

Replacement Value

This is the cost of replacing the asset at the end of its life span, a read-only information automatically managed by the system.

Maximum Life

This is the maximum useful life of the asset. This will be the number of years within which the asset will be fully depreciated, a mandatory positive numeric information.

Years Elapsed

This is the number of times (or years) depreciation process has been run on this asset, a read-only information automatically managed by the system.

Depreciation Type

This is the method to be adopted for the equipment depreciation: 1-Straight Line Method, 2-Reducing Rate Method, a mandatory information.

Depreciation Rate

In case of Straight line method, this information is a read-only information automatically managed by the system, and the rate (in percentage) will be automatically computed by the system based on maximum life of equipment. In case of Reducing rate method, this is an optional positive numeric information less than 100 (by default, the rate will be computed using the life of asset and coefficients defined in the Parameters).

Current Value

This is the current value of asset (after depreciation), as on the date specified by Upto Date, a read-only information automatically managed by the system.

Upto Date

This is the date up to which the asset has been depreciated, a read-only information automatically managed by the system.

Improvement Value

This is the amount spent towards improvements of equipment. This value will be considered for future depreciation runs on the asset, an optional positive numeric information.

Improvement Date


This is the date from which improvement has to be accounted for. Improvement value will be depreciated starting from this date till the end of asset's life. This is a mandatory information if improvement value is given.

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4.14.1 To Add Equipment Depreciation Details

Minimum information required to add Equipment Depreciation characteristics, is:

- Equipment identifier
- Commission date
- Acquisition value
- Maximum life
- Depreciation type

Click on the  icon to launch the ADD window.


4.14.2 To Modify Equipment Depreciation Details

The information that cannot be modified, is:

- Equipment identifier
- Equipment description
- Current value
- Years Elapsed
- Up to date

4.14.3 To Delete Equipment Depreciation Details

There are no restrictions for deleting Equipment Depreciation Details.

Click on the  icon to delete the current Depreciation Details

4.14.4 To Depreciate an Equipment

Click on the non-standard  button to start the depreciation process.

The user must specify the year up to which the assets to be depreciated are considered. The depreciation process will scan through all equipment for depreciation data that has been defined and depreciates them till the end of the specified year (financial year).

After the depreciation process is performed, the Current Value field of the Depreciation Details window will reflected the current depreciated value of the equipment.

4.15 FINANCIAL SUBCONTRACTOR

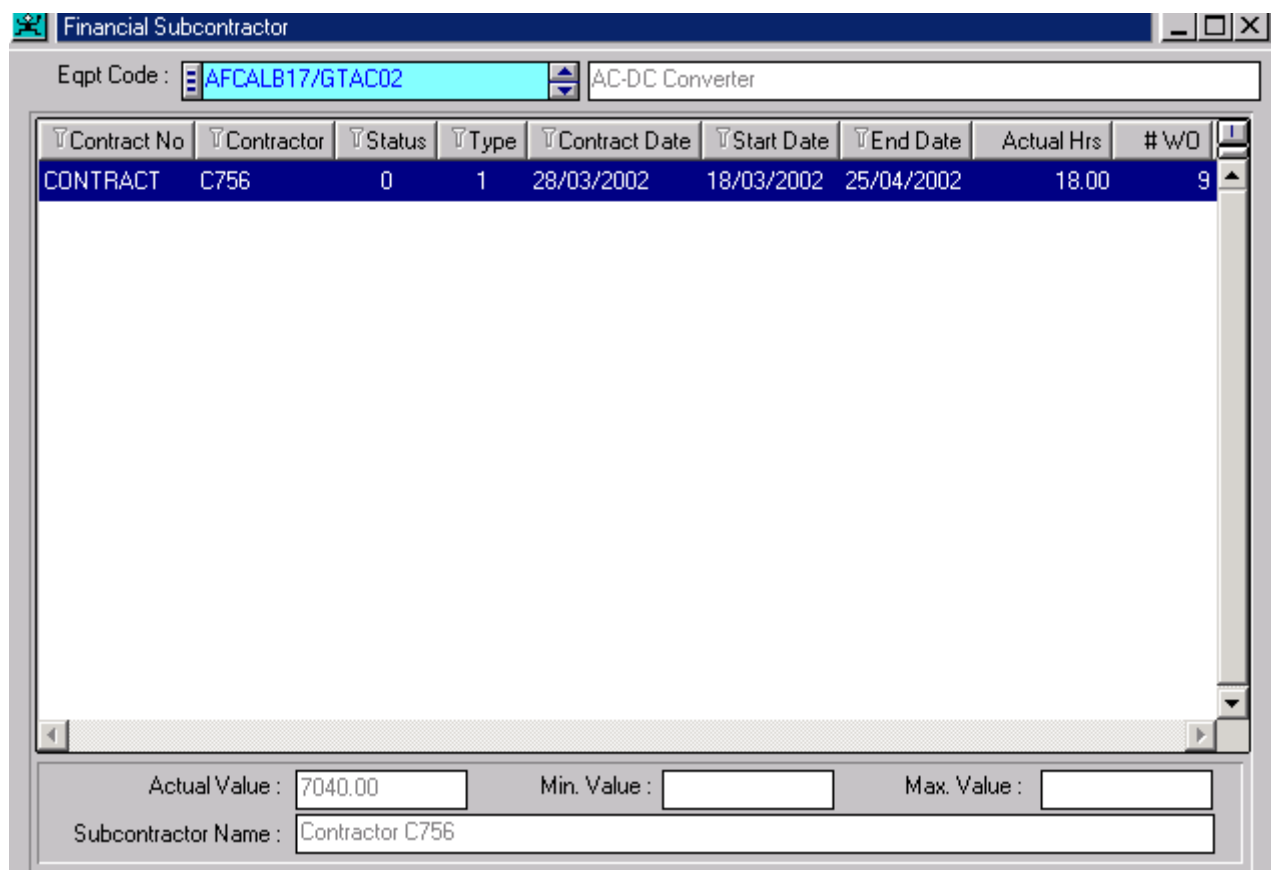
Path: Maintenance / Equipment Register / Financial / Subcontractor

One equipment can be covered by one or more maintenance contracts. System automatically maintains the performance details of a contract, like number of preventive and breakdown jobs serviced, number of man hours spent, etc.

This module displays all the contracts that have work orders carried out under them on the specified equipment. The information displayed is read-only and automatically managed by the system.

Select from COSWIN menu *Maintenance / Equipment Register / Financial / Subcontractor* to launch the Financial Subcontractor module.

The Financial Sub-contractor Details window looks by default as follows:



Contract No	Contractor	Status	Type	Contract Date	Start Date	End Date	Actual Hrs	# WD
CONTRACT C756		0	1	28/03/2002	18/03/2002	25/04/2002	18.00	9

Actual Value : 7040.00 Min. Value : Max. Value :

Subcontractor Name : Contractor C756

Double click on any of the contracts displayed will present the selected record in the **Contract Details** window.

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Detailed Field Descriptions:

Eqpt Code

This is the Equipment identifier, for which Sub-Contractor information is provided, a mandatory information. It must exist in the directory of Equipment or Groups of equipment.

A selector trigger button (or F2 key) linking to Equipment Selector is available.

Description

This is the Equipment description, a read-only information automatically managed by the system.

Subcontractor List Box

Contract No.	This is the Contract identifier
Contractor	This is the Sub-Contractor's identifier
Status	This is the contract status (0-open, 1-closed)
Type	This is the type of the contract (0-open order, 1-yearly)
Contract Date	This is the contract signing date
Start Date	This is the date when the contract period starts
End Date	This is the date when the contract period ends
Actual Hours	This is the total number of hours for the current contract
# WO	This is the total number of Work Orders for the current contract

Actual value

This is the actual value of the contract.

Min

This is the minimum value of the contract.

Max

This is the maximum value of the contract.

Subcontractor Name

This is the subcontractor name of the currently selected contract in the window.

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