Welcome to
Contractor's Guard

Engineering Construction Software

ECS

Release2

A comprehensive transactional program that takes care of the Contractor's day to day Projects' Management Activities and other Engineering, Tendering, Contracts, Consultant, Procurement and Client Interim Billing up to Hand Over creating instruction instruments in conjunction and ahead of your accounting or ERP software.

- **Project settings**
- **Tendering & Estimation**
- **Contracts**
- **Material**
- **Submittals**
- **Procurement**
- **Subcontracts**
- **Cost Control**
- **Client Interim Payments**
- **Inventories**
- **Variations & Claims**
- **Inspection Requests**
- **Minute of Meetings**
- **Management Dashboard**

Optional Modules include:
HR, Personnel & Staff Allocation, Housing ,
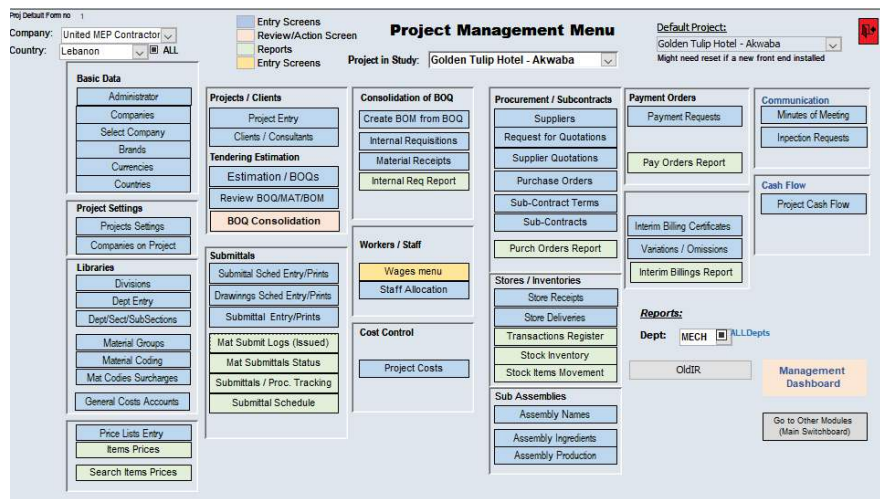Leaves, Time keeping & Wages, PMV

Contractor's Guard
Engineering Construction Software

Release 1

ECS

Under Update

Contents   Page
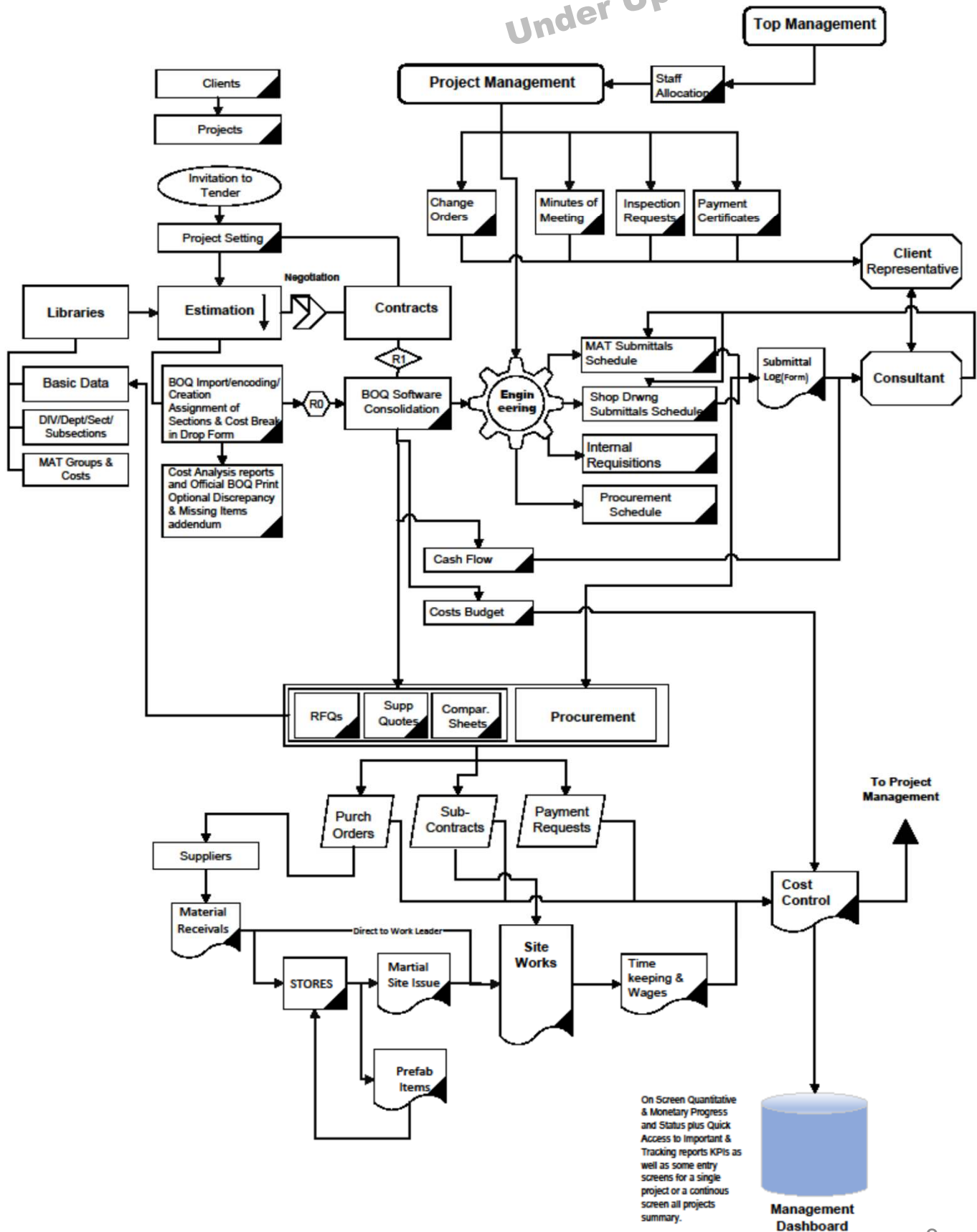
1) Procedures Flow Chart

following chart indicates the flow and interaction of transactional procedures of the program with versatility to start in at any phase though (It is best to start from the beginning).

3/5/2022
R2

Software Processes & Dependencies Flow Chart

Contractor's Guard

This Software is Transactional in every step. The project managers plans and record at real time their transactions through a computer generated official doctrine.

It is not intended to replace the companies accounting or ERP, but act as a stringent way to send information as a byproduct of the site personnel doing their job properly. A project manger can know his wages incurred on his activities before it reaches the accounting just by filling the time sheets

2) Software Characteristics

Software is Microsoft Access SQL Multi User, Multi Currency; inputting in different Currencies and outputting at currency of choice. International access to main program is via VPN internet tunnelling. Software has a help**?** button on each form. Software also acts as document control with a separate attachments back end data bank such for drawings, official documentation and data sheets. Transactions are grouped in modules where suppliers are entered in the procurement module while Projects and Clients in the Tendering module.
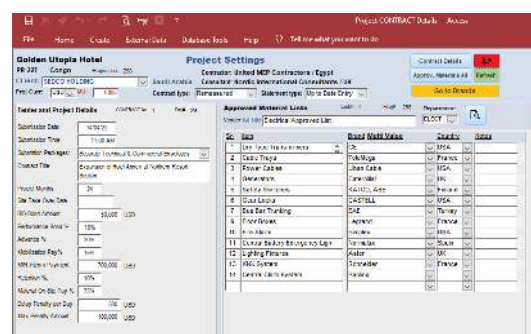
3) Basic Data Module

Basic Data is stored here as to Currencies, Exchange rates , Countries, Zones & Tariffs an, Company Addresses and Logos, Signatures and others

4) Project Settings Module

This Module Sets the Project Tender and Contract Title Conditions. Tender Dates, Bid Bonds, Advance Payments, Performance Bonds, Contract Types: Remeasured or Lump Sum, Interim Statement Billing Types: Current Work or UpToDate Work to approved Material Brands Lists. Also a list compiles all other companies on the project such as specialty Contractors and Consultants specifying nominated or others (Project Sign Board).

Other Contractual Terms as Contract Period, Penalties minimum interim statement amounts, Material on Site payments and others and encodes Contacts Details of Project Entities such as Client's Representatives, Consultants, Contractors for future correspondence and minutes of meeting and the mark up**.**

Project Settings Form

5) Tendering & Estimation Module

General

The Estimation Modules is the first step towards acquiring a prospectus project and is used as a tool for cost efficient estimation of the tender to built up the prices using the intended Mark Ups,

- Proper usage of the module will establish the foundation for other modules executing the Project should it be awarded and capability of registering the costs back to the estimation sheet for future adaptive adjustments
- Also It can be used on an on going project at hand that hasn't used this software at tendering stage making it possible to direct the project into software management Aid by reverse inputting the Tender Prices, re-estimating the costs more accurately, the Mark up will be a result rather than an output.
- This module data is used in the Bill of Materials.

User Instructions

- The Tender BOQ, Bill no & Divisions can be Imported from Excel or encoded Manually
- The cost entry is done by a drop out form to enter the to inherit or add the costs manually for each BOQ Lines. It allow inclusion of several items when Unit is Lot as Power Cables, in this drop form you can enter all cable sizes and take Off Quantities. Also when an item has different aggregates like Lump Sum price on complete installation of three Chillers, the aggregates would be the cost of 3 chillers, 6 Gate Valves, 6 flexibles3 check valves, 3 regulating valves, 1 transport, the items will be enters in the sub form and will be averaged over 3 and their costs fills the BOQ line
- BOQ lines have Drop Boxes for assigning the proper Divisional Dept Section and Subsections for example: DIV15, Mech Dept, Fire Fighting, Drainage, PVC Piping
- Aggregate Sub forms lines have Drop Boxes for assigning the material size / model from its groups. Mech dept Piping Black steel pipe 2 1/2" Sched 40, BS pipes can appear under Fire Piping Section or Chilled water Piping Section
- Quantity of BOQ Lines with Un-Assigned Subsection & Material will be flashing in red as reminder to fill
- The above 2.2 & 2.3 use Build in Libraries expandable by Contractor

Reports

- Client Tender BOQ Showing prices on official print out
- Internal Analysis Reports
    - o BOQ Lines sorted as original BOQ (Only line Costs and Prices)
    - o BOQ Lines and built in Aggregates sorted as original BOQ (Cost Details)

    - o BOQ Lines regrouped by Dept, Sections & Subsections
    - o Dept, Sections & Subsections Totals Summaries

Under Update

..........Tendering & Estimation Module Continued

Under Update

Tender / BOQ Entry Screen

Official Tender / Contract priced BOQ

Cost Analysis as per BOQ Listing Report

Detailed BOQ Analysis by Trades Report

Summarized BOQ Analysis by Trades Report

6) Library Module

Divisions

Work Break Schedules Library covers divisional, Departmental, Sectional and Sub sectional breakdowns as per general and international practices. The contractor Department, Sections and Subsection for MEP, Mechanical, Electrical and Low Current.

Division, Department, Trade Section & subsections Entry

Material

Material Library Section has the material assorted under group, product lines and Departments. Item Groups are linked to One or Multi Work Break Schedules (easier for selection at estimation BOQs). Unlike trading and manufacturing, contracting items are vast and Indexed coding is used. The naming follows a pattern in selection with reference to Brand, Model and Supplier.

Material Department Groups

Under Update

………. Library Module continued

Material and prices are entered in three ways, there s no abbreviation codes, just consistent Description say Connection male/female GI 1/1/4".
1. by entering direct under Material Groups and department Supplier, Currency, Brand and discount
2. By Supplier Quotation encoding with Brand. The Discount is on the main form but you can change as some suppliers give different discount for different groups in on quotation.
3. A review form that lists all items more convenient to inspect for missing entry
 All prices are converted to USD internally and you can make the Shift the tender to any currency

Brands Library

Brands Manufacturer Library with Dept, Country of Origen, and a Multi Selection of products library this brand makes, example one Brand can have Expansion tanks and Heat Exchangers

Brands Manufacturer Entry Screen

Cost Library

Cost Library Unit Costs in Material, Accessories, Ancillaries, Workmanship, equipment and general labour are entered. Supplier, brand, model no and even an attachment as data sheets me be included in here.

Manual Library build up: Items, Item Costs, Brand and Supplier & price list or quotations

7) Cash Flow Projections Module

General

The Cash Flow Module is a projection forecast for the project providing the client with information to allow him to allocate his resources for the payments schedule which some time is a client's requirement. For the Contractor, it shows his expenditure and his net cash flow allowing him to anticipate for any required over drafts. It accommodates for Advance and Mobilization Payments, held deposits for bank Guarantees and their Deductions as well such as performance retentions and release, advances to suppliers on dates stipulated by lead time and Material on Site Payments.

The Cash Flow Module usage is for the following:
- Client use as this is often a requirement by the Client himself, as this allow him to allocate his resources for the Contractor payments schedule.
- Contractor use, as it shows the expenditure and give the net cash flow allowing him to anticipate for any required over drafts

Alternatives Applications

- Auto Population from BOQ, this inherits the data from the BOQ Module and makes available for the Cash Flow Module.
- Manual Entry, this allows the contractor to use the module from scratch. (This in the case where the software to apply on a project at hand without the BOQ used
- Semi Manual Entry, this is recommended even if the estimation was done manual. This by at least entering the Quantities Unit prices and by grouping under divisional sections .

Cash Flow entry Screen where projected cash flow is spread over the from the activity over the duration of each activity

……….Cash Flow Module Continued

Financial Section

Following to be entered here:
- Advance Payment %(Advances Drop Down), you enter the Percentage and the Month to be Received usually the first month.
- Mobilization Payment %(Advances Drop Down): you enter the Percentage and the Month to be Paid. It could be the 1st or 2nd Month and will be fully amortized by the end of the Project
- Deduction on the Above from the Monthly Statements (Deductions Drop Down): This applies the deductions on all billing Works Values through the project one for each by entering the same percentages of the above and will be fully amortized by the end of the Project
- Retentions %, Performance and others (Retentions Drop Down): This applies the deductions on all billing Works Values through the project. The software will automatically release the amount at the end of the project (Last Month)
- The Module allows for deposits against bank Guarantees in as percent of the Guarantee amount. However, this shows under contractor's Finance Expenditures below.

Work & Expenditures Section

The project duration is inherited from the Tender / contract settings
- The estimated spread of work billings is set by Start Month and End Month. The value of work Billing will be averaged over the selected period.
- Payments against Material on Site percentage (Tender / Contract Condition) is accommodated for on start month of activity.
- Expenditures are averaged over the activity's months
- Expenditures for down payments on long lead items are accounted for, the lead delivery is brought forward from the Submittal's Schedule and the month where the payment to be made is set by subtracting the lead time from the start month.
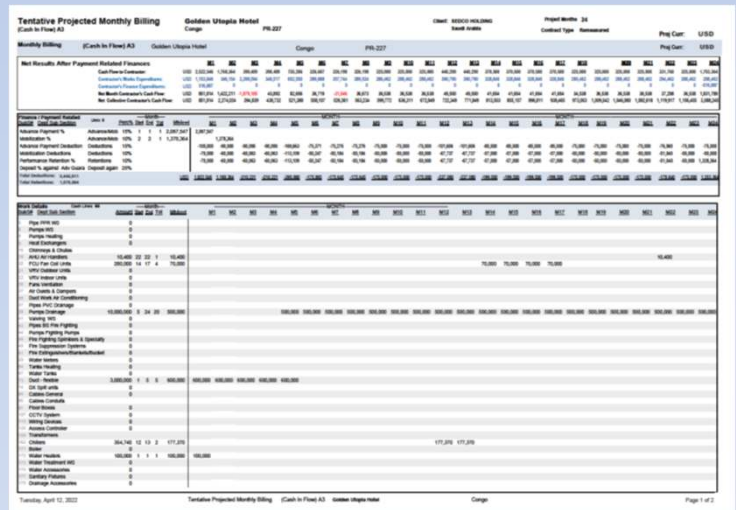
Dynamic Entry Screen

The results of the entries is reflected on the screen by populating the months while entered

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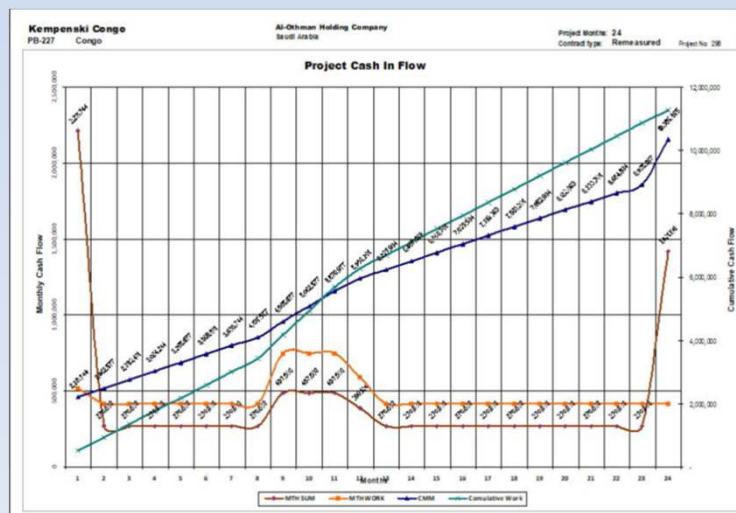## ....Cash Flow Module Continued

Cash Flow Spread Sheet

This spread sheet report details all Figures and Criteria in performing the Cash Flow Projections
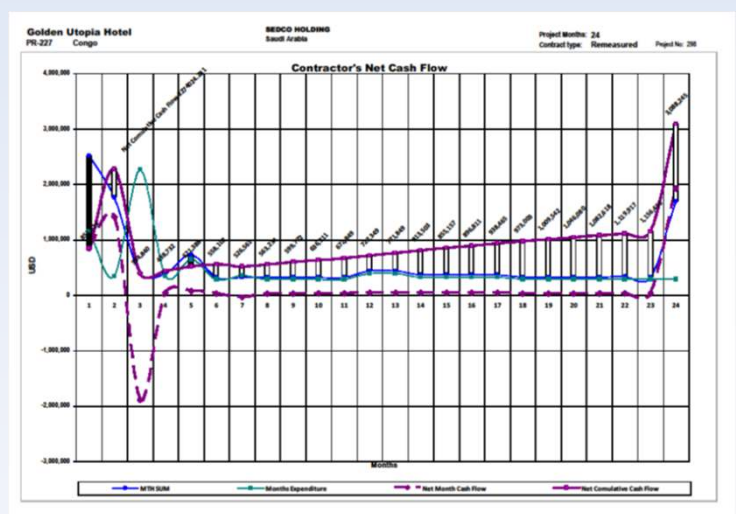

Cash In Flow Chart (Graph)

Showing monthly Work Values and actual Billing / Received amount including advance payments, mobilization, deductions and retentions. Similarly done for cumulative amounts.

Cash In Flow Chart (Graph)

showing monthly Work Values and actual Billing / Received amount. Similarly for cumulative amounts

8) Submittals Module

Under Update

Submittal Schedule & Forms
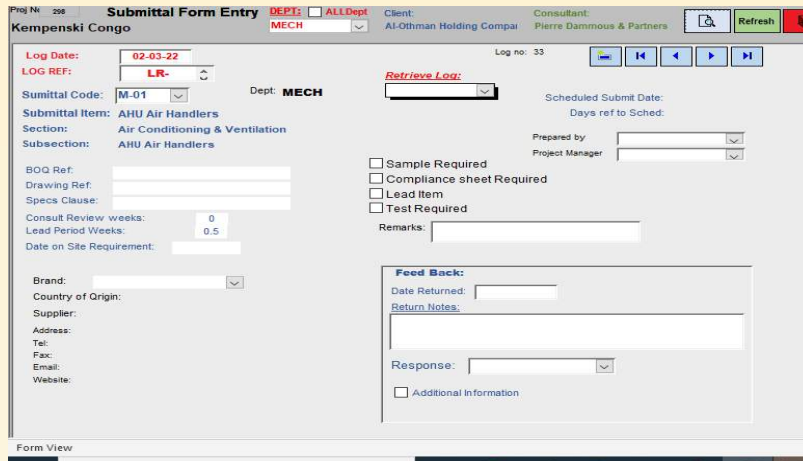
- **Submittal Schedule** is Auto Generated and coded from BOQ per Division, Departments, Sections and Subsections and assigns automatic numbering of 2 or 3 digits with a prefix as assigned to the Dept ex: [M08].. The form specifies: First Fix, Lead Items, Material on Site Requirements, Latest Submittal Dates considering Lead & Consultant review time. Reference to BOQ Number, Specification Clause, Brand, country of origin and supplier can be specified and drawing are encoded. Document attachments such as data sheets are stored in the schedule or at the the Submittal Form Log Point. Additional hidden sub item and ancillaries can be submittals can be added manually to the submittals schedules such as support and other items that need approval.

- **Submittal Form:** Selects Submittal from Schedule and is the actual submittal in a choice of built-in formats. Client, Consultant and Contractors Logos show on this form and all details in from the Submittal Schedule are inherited but can be changed in here and Print with additional notes for Consultant. Form encodes consultant feedback Feed back Approved as noted, revise and resubmit, rejected and if any additional information required. In the Submittal Form, Catalogues Data Sheets and other relevant Clauses can be attached to the Form for quick print Out. A feed back section is in the included for consultants record the consultant approvals or if further information is required.

Material Submittals Schedule Screens

.... **Submittals Module Continued**

Under Update

Submittal Log Form Entry
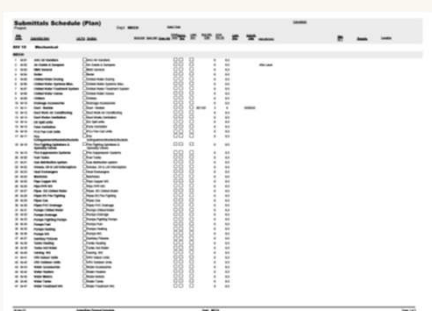
Shop Drawings & Calculations Submittals Schedules Submittal Sheet Print
A different Form is used for Shop Drawing and
Calculations Submittal Schedule.
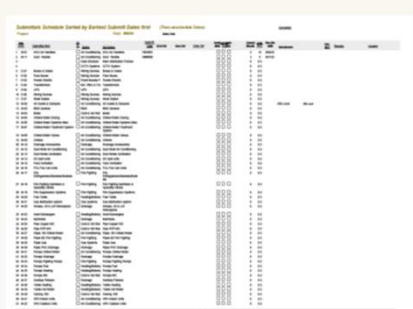
Submittals Schedules & Tracking reports.

Submittals Schedule Code Listed | Submittals Schedule Section Grouped | Submittals Schedule early Submittal Dates

9) Procurement & Subcontracts Module

Under Update

Procurement General

Purchase orders are done by selecting the Internal Requisition, Procurement Schedules Generated from BOQ reflecting the Material on site etc Master Bills of material are Done for the whole project for section Procurement Tracking till material Receipts, Internal Requisition can be carried partially from Master BOM Showing balance order / Over

Suppliers

Suppliers are entered through the Suppliers Entry Form. Information about Country , Address, Telephones, Faxes, Emails, website, Commercial registration & VAT number is entered as where as ware house locations. A Retrieve drop down is available for retrieving the desired supplier. Trade Lines and Brands they carry is entered too.
Also Contacts Details as to Names, Posts, Phones & emails are entered.

Supplier regular payment terms are selectable as well as Banks and swift /Ibans are entered. Reports including supplier sheet and Suppliers Reports by Country and by Trades are available.

Suppliers Entry & Edits Screen

Internal Requisitions

Internal Requisitions are received from the Project's Management either for refining the soliciting process or as an approved request for a Purchase Order with consultant's approvals on Brand and /or selected models. Internal Requisitions carry technical attachments as Data sheets and other necessary specification Clauses or drawings.

Internal Requisitions Entry Form

Request for Quotations (RFQ)

Internal Requisitions are received from the Project's Management either for refining the soliciting process or as an approved request for a Purchase Order with consultant's approvals on Brand and /or selected models. Internal Requisitions carry technical attachments as Data sheets and other necessary specification Clauses or drawings.

Request for Quotations Form

…………… Procurement Module Continued

Under Update

Purchase Orders (PO)

Purchase Orders are filled by pressing the copy RFQ Button and entering the Supplier Prices and Terms and payment Conditions. Should the PO need and advance or full payment, a request for payment should be filed in the Payment Orders Module. The PO is one of the instruments in the Cost Control Module

Purchase Orders Entry

Sub-Contracts (SC)

Sub-Contracts is a commitment and reflected in Cost Control same as Purchase Orders. The Sub-Contract should be signed on the Print Out generated from the Module and dates of Signing specially the of the subcontractor. It is usually used for Supply & Apply contracts and for Supply only where Lead Time and specs are crucial and to Apply only pertaining to quality of works, progress and termination Clauses are present.

The Scope of Works Items details can be copied from the Internal Requisitions where the RFQ were issued on and based on the prices of the chosen Subcontractor with applicable discounts.

Special Terms are specified as to Contract Duration. Commencement of Works, Payment Method, Insurance, Penalties etc.

General Terms are specified as to Responsibilities, Force Majeure, Confidentiality, Labor Relations , safety measure, Delays, Inspection, Claims, Change Orders, Disputes etc.. The Terms are imported from multiple built in versions which you can add ore modify

Payment Orders can be made on progress which track be tracked on various Reports

Subcontracts Entry

Official Sub-Contracts Software Generated

10) Interim Payment Certificates Module

Under Update

The billing module is a rapid foul proof way to issue Interim Billing Statements tailored to whether to contract is re-measured or lumpsum and to billing method quantity or percentage and whether following the current progress or following to re-evaluation of progress up to this statement. The operation makes the previous of the new statement equals the UpToDate of the previous statement when creating a new statement and also shows the balance of works value and dues. It allows deductions for advance & mobilization as well as retentions for performance and others for net amount dues.

Interim Billing Statements Form

Interim Payment Certificates

Under Update

11) Stores & Assembly Module

Stores & Inventory

Often contractors may have to buy full requirements of a project item such as precast concrete rings for manholes of various depths to fit field elevations. It is impractical to charge the work break cost of the project at once, so they are charged to the project store and then the cost is later charged to the cost account when discharged to site by a material release thus following actual expenditure in the billing cycle. In addition it can be used for the project's stores, one or more main stores such as for general hardware and bulk purchases.

Stores Receipt

Stores Delivery

Items Balance Report

Items Movement Report

Assembly

Same as Store & Inventory, many times contractors has to prepare ready things ahead; Take concrete footing for lighting poles for example, having them all precast on site is better for the flow of work. So the whole quantity can prepared. In this case the material of rebar, ready mix concrete and form work cost can be absorbed and the footing appears as an inventory cost later charged to the appropriate Section Cost.

Assembly Items Ingredient's Entry

Assembly Item Production Entry

12) Minutes of Meetings

This Minutes of Meetings Module is an essential instrument on the overall project documentation. It governs the floe of the projects and its progress. Attendees are easily referenced from the client and his appointed companies, consultants, the contractor, other subcontractors and guest that attend the meeting.

Meeting type, regular, upon request, date, Time and duration, and saving circulation signatures and other under attachments and searches, with registrar and various reports of pending items and easy search for topics

Entry Screen for Minutes of Meetings

Contractor's Attendees

Client's Attendees

Guests Attendees

Meeting Attachments

13) Time Keeping, Wages & Staff Allocation Module

Under Update

The Time Keeping & Wages module is quick way to get the wages ready for accounting, it is also a spot factor in cost Control. Also a personnel file is encoded with assigned position, semi skilled mason and his credential can be stored as attachments in the Software. This module can be handled from project site or Head Office.

The wages sheet can be used in two ways: either by daily attendance or a workers time sheet weekly, biweekly or monthly. The time sheet calculates the over time and applies the over time factor, the project they worked on and the work section (Cost Section) and apply on the items cost. Also a brief description of works under taken can be entered.

What ever the method used, it collects the workers time sheet with his pay for a set period. Multiple Reports are available for analysis

Time Keeping & Wages Menu

Workers Data Entry

Worker Pay Slip

Daily Time Sheet multi workers entry

Daily Time Sheet multi workers Report

Daily Time Sheet Individual workers entry

Staff Allocation

Staff Allocation is don by an Allocation Slip Entry and you can Trace the History of the Staff member movement through the company from project to project or Heat office. The Module can do the same for his / Her advancement , salary raises or benefits modifications
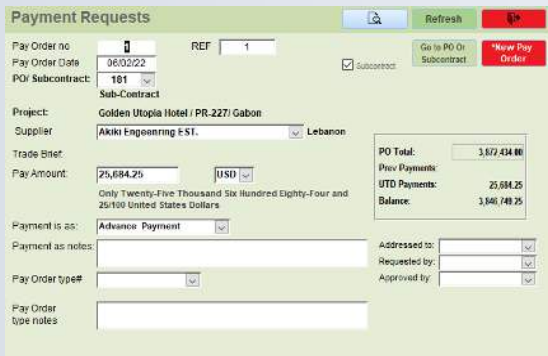

Staff Allocation History Report

14) Payment Requests and Accounts Module

Payment Requests and Accounts Module is for site to govern of delivery of suppliers & progress of Sub-Contractors to clear payment and trace their standing.

Payment Request Entry

Payment Request Form

15) Cost Control

The Cost Control Module Analysis & KPIs are an intrinsic result of other modules' operation. Once a cost reference is set at time of proper estimation or a revised estimation. The Cost Modules references the Dry Costs direct to the Project. All transactions are referenced to the Work Break Schedule. By POs, Subcontracts, Wages, Staff Allocation, Site Offices Expenses and other general Site expenses such as HSE, PMV as external Leases or as fixed surcharge from company fleet

The Cost Controller observes the reports and can hold electronically new commitments.

Under Update

16) Variations, Change Orders & Claims Module

Variations, Change Orders & Claims Module are similar and constitutes an amendment to the Contract but are results of different circumstances

Variations

Variations are usually an adjustment in BOQ or unforeseen Items by Client Consultant or site conditions

Change Orders

Change Orders are usually additional work asked by the client or suggested by Contractor. It could be a cancellation of works aroused by both the Client or contractor

Claims

Claims are usually requested by the Contractor as damages and costs incurred on him in several ways, delays in permits, delays from the Clients, or causes by other contractors on the Job.

Variation Request & Form Entry

Variation Request From Report

Information as to Title, Brief Description, Purpose, Based on Client Side, Contractor side or both request, Priority, Time Impact on Schedule and stored attachment as drawings, spec reference guides and Cost break down of order

17) Inspection Requests & Certification Module   *Under Update*

Inspection Requests & Certification Module is to insure timely acceptance of work to be able claim in the Payment Certificates or release payments for Sib-Contractors.

The request should include type of inspection or tests, time and location mention procedures and governing Standards.

Inspection Request Entry

Inspection Request / Report Form

18) Management Dashboard Module

Under Update

The Management Dashboard is a Quick review of a single Project or Over all Company's Projects and an access to important detailed reports from one screen rather jumping from one menu to another.

On the left are the project Setting and Financial Status with progress bars of the project figures like:

Contract Value:
Billed Works Value:
Bills under Collection Bonds
Value(Inbound):
Current Outstanding Commitments:
Current Outstanding Commitments:
Suppliers' credit:
Sub-Contractors on the Job
Sub-Contractors on the Job
Bonds Value(Outbound):
Value of inventory

On the left are Quantitative summary of Transactions an their progress with progress bars.

Summaries such as;
Submittals on Schedule
Submitted
Unsubmitted
Approved
Pos Issued
Sub-Contracts Signed

The Dashboard can redirect you to essential entry screens where one can modify too, such as Company Access Passwords (Extra Protection layer), currencies, brands, Brands, review subcontracts and other due dates.

Management Dashboard
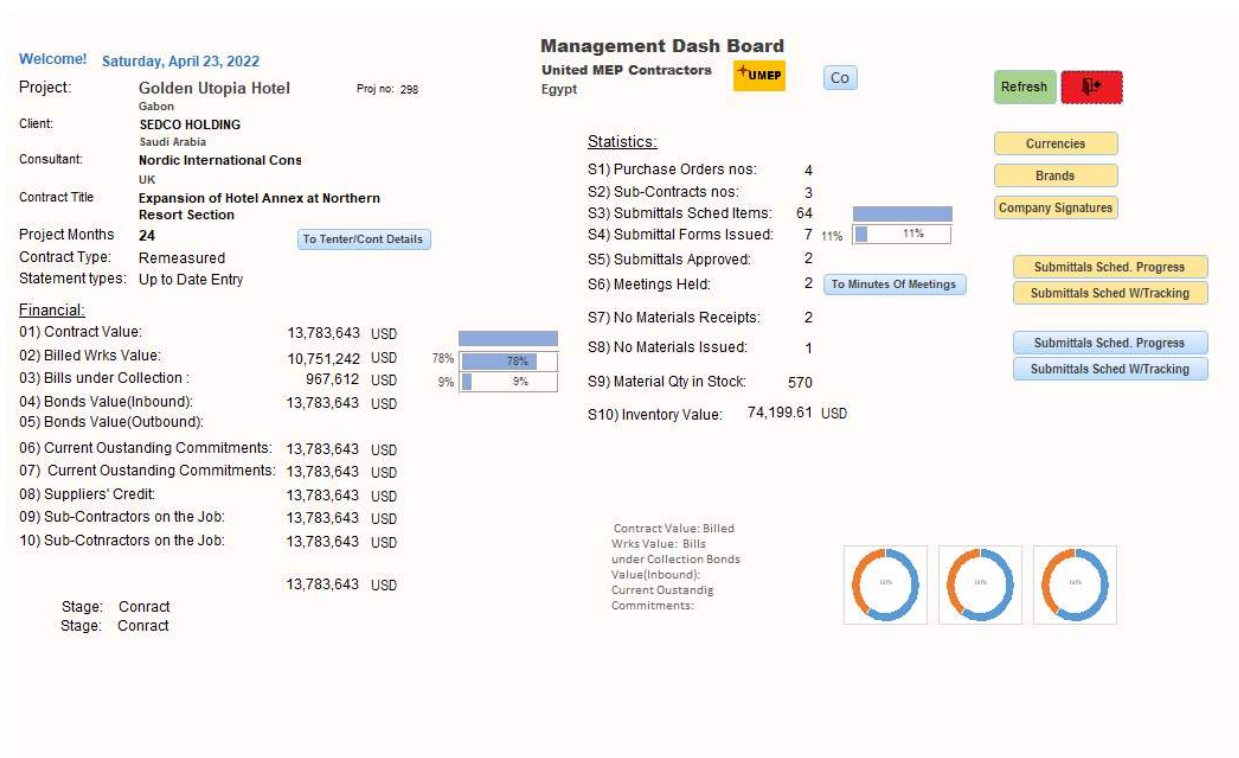
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