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Engineering & Construction Timesheet Management



QTIME

Timesheet Management
System



Improve Efficiency with QTIME

QTIME

Information Management Solutions for the Construction Industry

Timesheet Management System

Introducing QTIME

For many organizations, not just in Engineering and Construction, people are the major assets and costs of a company. There are a number of elements to management of the time expended by employees but usually companies progress little further than payroll in this regard. Timesheets are often completed manually on paper and then processed at a head office for payroll and sometimes job costing purposes.

QTIME is a system for management of Time, driven by the philosophy that time capturing done once, as near to the coal face as possible should be sufficient to provide all the other time related information a company or project needs.

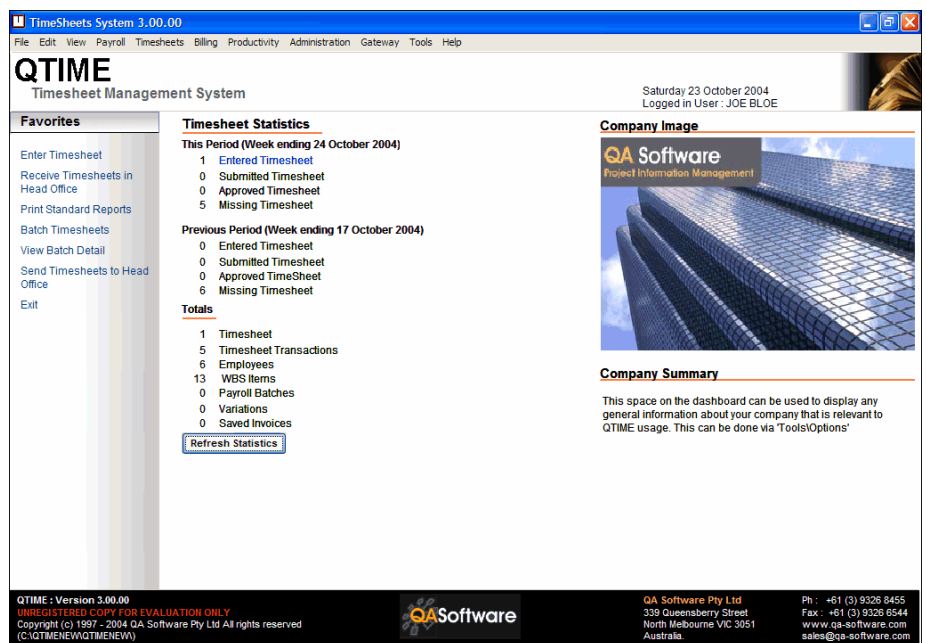
Capturing and approving timesheets at the location where the hours have been spent minimises errors and ensures that timely management information is available as soon as the hours have been incurred.

Purpose of QTIME

The purpose of QTIME in regard to timesheet management includes:

- Timesheet entry in terms of actual hours worked against a work break down structure with full pre-processing to allow an upload to payroll without further manual intervention.
- Management of the approval process for timesheets both at a supervisor and project level.
- Management of hours expended against a work break down structure for daily, weekly or monthly reporting at any level in the WBS.
- Management of progress and productivity with a unique module for measurement of progress to date and forecasting to complete.

Management of the client billing process via definition of rules per client to enable the system to calculate invoice values automatically for even the most complex environments.



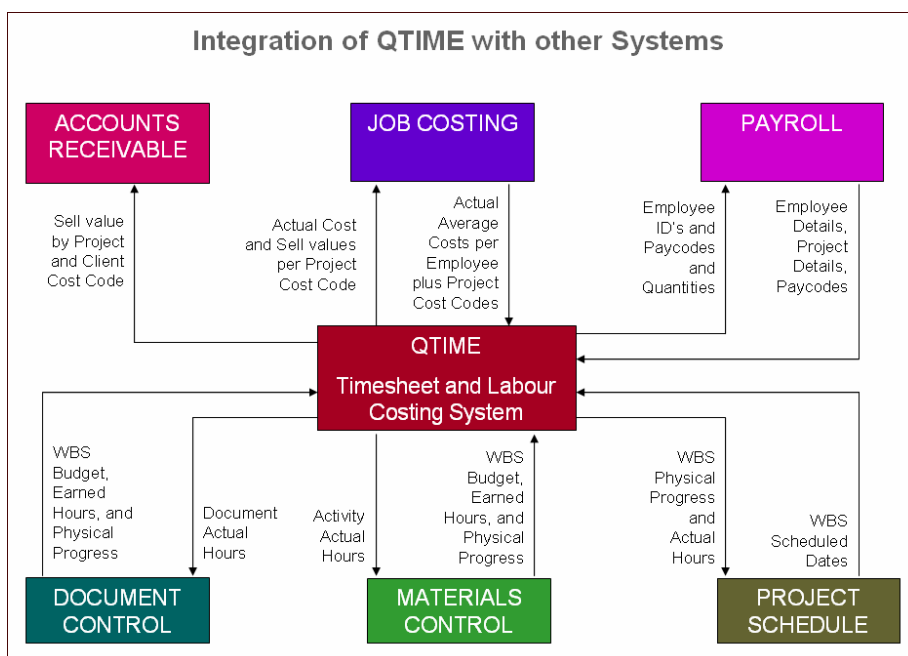
Timesheet Management System

Features and Benefits

QVDMS provides the capacity to:	
>	Create a multi-level, project based work breakdown structure (WBS) for capture of timesheets.
>	Enable on-line timesheet entry, with automated approval work flows .
>	Configure Project based rules for automated generation of pay codes with full integration to Payroll.
>	Manage hours spent down to any level of the WBS including engineering deliverables .
>	Measure progress, with auto calculation of earned values and forecasts to complete.
>	Configure Client based rules for automated generation of Billing information.
>	Capture time sheets once only to support all your business needs.

Which deliver benefits:	
>	Improved management reporting with early identification of problem areas.
>	Improved efficiency in the management of the timesheet approval process.
>	Increased productivity in the pay office by elimination of manual entry of data for payroll.
>	Increased productivity in engineering by integration of time sheet entry with Document Control .
>	Reduced risk of cost overruns via early and automated prediction of activities likely to go over budget.
>	Increased productivity and reduced risk of errors via elimination of manual calculations.
>	Increased productivity by eliminating the multiple processing of timesheet data for different purposes.

An Integrated System



While QTIME can be used as a comprehensive stand alone Time Management System since it contains all the functionality necessary for:

- Time Capture and Approval.
- Budgeting and Forecasting.
- Progress Reporting.
- Award Interpretation.

It is more often used as a key component of the overall project management and corporate systems used by an organisation. Hence QTIME contains the “hooks” and features necessary to make integration with Payroll, Job Costing and Scheduling systems a straightforward exercise.

The diagram attempts to show the possible links that can be made between **QTIME** and other systems.

Timesheet Management System

Employees and Security

A comprehensive employee library is a key part of the QTIME System.

Examine the screen below to see some of the attributes that QTIME stores in relation to employees.

Notice that a list of all employees is shown in the left hand part of the screen while the details relating to the currently selected employee are shown on the right.

ID	SurName	First Name	Superv
QA	BLOE	JOE	QA
JB	BOND	JAMES	
SJ	JAMES	SALLY	
SM	MAN	SUPER	QA
IM	MANNING		QA
RM	MINWORTH	RICHARD	JB

Hierarchical Workbreak down structure

Effective time capturing is normally done against a Work Breakdown Structure (WBS). QTIME provides for up to nine levels of work breakdown structure.

Not all of these levels need be used, or even be hierarchical in nature.

For example, an Activity may be related to a Project in a typical hierarchical relationship, where as a Cost Centre may also be a sub code to a Project, but may not be hierarchical. This would enable a single Cost Centre library to be used across all projects whereas the Activity library would be project specific.

The field names for the generic coding structure and the hierarchical links between codes are defined during the QTIME implementation process.

Notice how the above data is displayed in a "spread sheet style" format making maintenance of the data extremely simple.

The QTIME Tool bar seen in the top left of the screen above has all the functionality required for adding new items, printing, searching, and editing of the data. Drop down lists are used extensively throughout QTIME to simplify and ensure the consistency of data entry.

Timesheet Management System

Timesheet capture and Approval

QTIME supports multiple formats for timesheet entry.

The standard format is capable of handling timesheets for staff and wages personnel as well as sub contracting staff.

The most complex timesheet is required for wages staff as this utilizes all four page frames of the example time sheet to the right.

For consulting organizations where Award interpretation is not required, QTIME is supplied with a simpler timesheet entry screen.

For organizations with both staff and wages, QTIME can be configured with multiple entry methods on the same installation.

Notice that timesheet entries are added in rows and for each row, valid combinations of codes are selected from drop down lists. The example shows a simple coding system utilising three hierarchical codes (Project Number + Cost Code + Activity) and one non-hierarchical codes (GL Account). The PCType and Rule Set are captured because this time sheet is for a wages employee.

Once Time sheets are completed they are submitted for approval by the responsible supervisor. QTIME provides a complete audit trail for changes made to timesheets.

Productivity and Progress

The facility to manage budgeted man-hours and progress within QTIME is a fundamental differentiator between QTIME and other Time Management Systems.

Budgeting is done at the lowest level of the hierarchical coding structure in the QTIME *Budget/Forecast* file in terms of either hours or quantities. Actual hours are "posted" into this file at the end of every period, which can be as often as daily. Physical progress via a percentage complete or actual quantity is also recorded in this table or, up-loaded from lower level systems such as a scheduling system or another QA Software product such as QDMS for Document Control.

QTIME is then able to calculate *Earned Man Hours* and *Productivity* factors. QTIME also supports a range of forecasting to complete algorithms that ensure the most accurate and objective forecast final total is projected. The results rolled up at any level in the hierarchical coding structure.

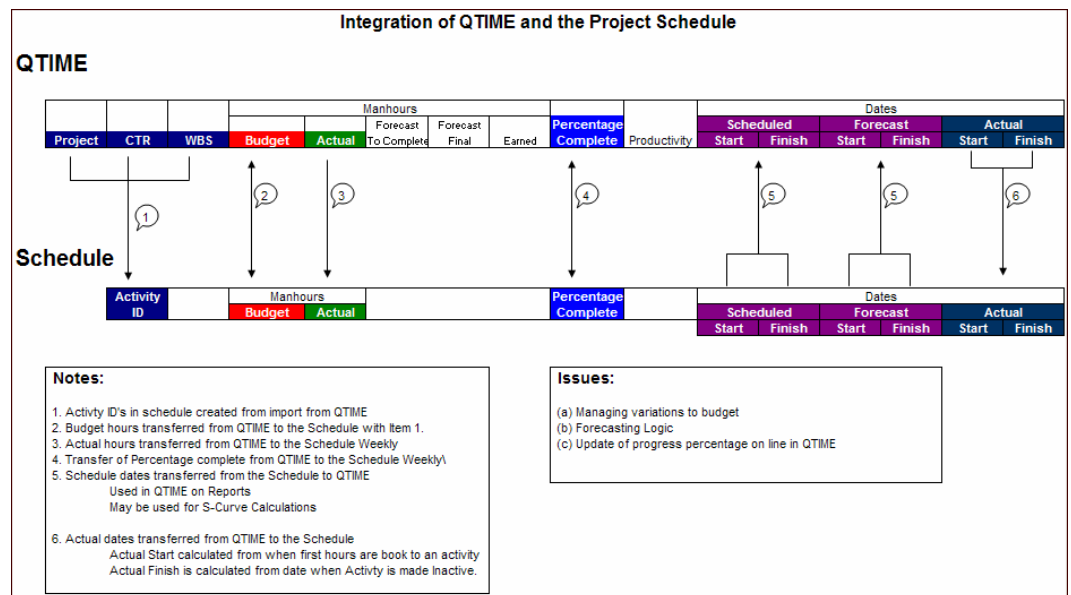
A history of all forecasting is maintained to enable advanced reporting and analysis in terms of trends. This is an extremely powerful and useful feature that not even the most advanced scheduling systems can offer with comparative structure and processing automation.

Timesheet Management System

Scheduling

QTIME can be linked to popular scheduling software such as Primavera's P3 System. This enables the transfer of Actual hours from QTIME to the schedule, saving the normal manual entry that takes place in this regard. In the other direction, QTIME can import Schedule and Actual dates from the Schedule enabling this information to be on line for all users and also for advanced reporting.

The diagram to the right describes the potential relationships between QTIME and the Schedule.



Payroll

It is a rare organisation that employs wages personnel in the construction industry, and does not have to do any manual adjustment, calculation or data entry to convert paper timesheets, completed on site, for readiness for entry into their payroll system – until now!

While QTIME is not a payroll system, it can store all the logic necessary to automatically convert simple man-hours recorded into pay codes, ready for export to payroll based on Australian Awards and Project or Location specific Site Agreements.

Payroll - Award Definitions

Award: A06 - Demonstration Site

Award	Effective Date	Rule Set	Rule Set Description	Day No	Seq	Pay Code	Pay Title	Max Hrs	Min Hrs	Active	PTO
A06	01/01/1999	1	Normal Day	1	1	A01	ORDINARY HO	8.00	0.00	Y	
A06	01/01/1999	1	Normal Day	1	2	A02	1.5	2.00	0.00	Y	
A06	01/01/1999	1	Normal Day	1	3	A03	2.0	14.00	0.00	Y	
A06	01/01/1999	1	Normal Day	1	7	A10	RDO	-0.40	-0.40	Y	
A06	01/01/1999	1	Normal Day	1	10	A39	Workface Crib	0.34	0.34	Y	
A06	01/01/1999	1	Normal Day	1	6	HM4	MEAL ALL +M4	1.00	1.00	Y	
A06	01/01/1999	1	Normal Day	1	4	HT9	FARES T9 for M	1.00	1.00	Y	

Award Rule Set

Award	Effective Date	Rule Set	Day No	Pay Code	Worked Hours	Log WH	Join	Skill Logic	Skill Join	LT Logic	LT Join	Active
A06	01/01/1999	1	1	A03	WH >	10.00						Y

The indicated line on the image to the left can be interpreted as saying:

"If the employee has time allocated to a project linked to Award A05, then, effective as of 1/1/99, if the employee works on Day 1 of the pay cycle, then **QTIME** will generate Pay code A03 (Double Time) for those hours worked on that day that exceed 10, up to a maximum of 14 double time hours."

The "Rule Set" adds a further degree of flexibility enabling multiple groups of rules within an Award.

By defining the above logic for all Days and conditions in the Pay Cycle, QTIME can generate the correct pay codes automatically, from the most basic of timesheet entry, in a consistent manner throughout a project.

To further explain this concept, the screen below shows the results of an award interpretation on a typical timesheet after pay code generation has taken place.

Timesheet Management System

Notice on the left hand side of the screen that the timesheet hours have been dissected into a series of pay codes such as A01, A02, A03 based on the Award Interpretation logic set up by the System Administrator.

For example, Ordinary Time (Paycode A01) has been defined as the first 7.6 hours in day (Monday to Friday). The next two hours in a day have been defined as Time and Half (Paycode A02), with Double time defined for the remainder of the day.

However, not only can QTIME calculate pay codes for Worked Hours, it can also calculate Hourly, Daily and Weekly allowances. Notice on the above screen that Pay code H45 for has been generated with the total hours worked.

PayCode	Title	Project	Cost Code	Cost Type	18Oct	19Oct	20Oct	21Oct	22Oct	23Oct	24Oct
A01	Ordinary	JOBN001	COSTCODE02	CT	7.60	7.60	7.60	7.60	7.60		
A02	1.5	JOBN001	COSTCODE02	CT	2.00	2.00		2.00			
A03	2.0	JOBN001	COSTCODE02	CT			2.00				
AA4	WFCrib	JOBN001	COSTCODE02	CT	0.33	0.33	0.33	0.33			
H45	FA ALLOW	JOBN001			1.00	1.00	1.00	1.00	1.00		
HFA	Oc 1st Aid	JOBN001			1.00	1.00	1.00	1.00	1.00		
HM2	+M2 Meal	JOBN001			1.00	1.00	1.00	1.00	1.00		
HM4	Meal+M4	JOBN001			1.00	1.00	1.00	1.00	1.00		
HT9	Fares+T9	JOBN001			1.00	1.00	1.00	1.00	1.00		

One of the great advantages of this is that this calculation can be seen as the timesheet is entered and hence checked at point of entry. A second advantage is that responsibility for the interpretation, establishment and maintenance of rule sets can be assigned to a Paymaster at head office and the rule sets then distributed in a controlled manner as required, ensuring that consistent application and interpretation of pay entitlement occurs wherever QTIME is deployed. The supervisors entering the timesheets simply press the Generate button to see the relevant pay codes.

Once the timesheets for a period have been entered and approved in QTIME, a Batching process is used to export timesheets from QTIME to a payroll system. At the end of the period, a batch is created and employees allocated into that batch. Weekly allowances are created and the batch can then be exported to payroll systems.

Client Billing

Consultants especially, often make heavy going of the process of billing a client for hours worked on projects, especially in offices with multiple projects ongoing at the same time.

The process of client billing becomes even more complex if multiple rates apply, perhaps based on locations or, for overtime worked. In the case of billing the time of wages employees, multiple rates are often based on penalty rates which can mean several different sell rates for each trade.

Client	Location	Classification	Classification Title	Rate Type	Sell Rate	Effective Date
CLIENT0001	ADL	PMR	Project Manager	ORDINARY	20.00	01/01/1999
CLIENT0001	ADL	PMR	Project Manager	T&HALF	50.00	01/01/1999
CLIENT0001	MEL	BMW	Boiler Maker Welder	DOUBLE	15.00	01/01/1999
CLIENT0001	MEL	BMW	Boiler Maker Welder	ORDINARY	5.00	01/01/1999
CLIENT0001	MEL	BMW	Boiler Maker Welder	T&HALF	10.00	01/01/1999
CLIENT0001	MEL	PMR	Project Manager	DOUBLE	15.00	01/01/1999
CLIENT0001	MEL	PMR	Project Manager	ORDINARY	5.00	01/01/1999
CLIENT0001	MEL	PMR	Project Manager	T&HALF	10.00	01/01/1999
CLIENT0001	SYD	PMR	Project Manager	ORDINARY	5.00	01/01/1999
CLIENT0001	SYD	PMR	Project Manager	T&HALF	10.00	01/01/1999
CLIENT0001	SYD	PMR	Project Manager	DOUBLE	15.00	01/01/1999
CLIENT0002	ADL	PMR	Project Manager	ORDINARY	5.00	01/01/1999

The QTIME Client Billing module is powerful and flexible enough to handle even the most complex situations. As with the paycode generation module, the key here is that the person entering the time sheet does not enter the penalty rate information. Instead, rules are defined per client which enable QTIME to determine the correct rate type and sell rate to use for the hours captured. Thus the process of calculation becomes automated and errors are reduced or eradicated completely.

QTIME uses an effective date to enable the logic to be changed without affecting hours already captured and billed. This means that QTIME keeps a complete history of all hours worked including the rate at which they were billed if applicable.

Timesheet Management System

Remote point of entry

On larger projects and in larger companies it is often the case that time sheets need to be captured at multiple locations. A fast communications network may not always connect these.

QTIME takes this into consideration and enables time sheet entry from any location. Via either a browser over an intranet or Internet, or alternatively, using the QTIME Gateway module.


The QTIME Gateway allows larger sites to run a complete QTIME Installation locally but still have master control tables such as employees and site agreement logic maintained in head office.

Control tables are uploaded to the site via the gateway (using dial up networking) and timesheets are downloaded to head office for payroll processing. Disk transfer can also be used if access to a modem is not possible.

This solution is ideal for larger remote sites where performance is critical for timely data processing.

Summary

- On-line entry of timesheets with electronic approval by supervisors for the office environment.
- Timesheet entry for wages employees by supervisors for construction sites.
- Full user security.
- Remote point of entry of timesheets supporting multiple and remote locations.
- Flexible nine level hierarchical work break structure.
- Budgeting, earned man-hours and productivity reporting all done within QTIME.
- Links to scheduling software for import of dates & export of actual hours.
- Payroll dissections for automatic and on-line view of penalty rate and site allowance calculations, ready for up-load to payroll systems.
- Collation of hours by cost code for up-load to Job Cost systems.



Productivity Report (Displaying Hours) as at 24/10/2004

Report No.: 01

Page

Run Date: Saturday, 23 October 2004 Time: 18

Project Nos. between JOBN001 and JOBN003

Cost Code	Cost Type	Act.	Current Budget			Quantities Done			Hours Earned			Actual Hours			Production Rate			Forecast Hours	
			Qty	UOM	Hrs. Prd Rate	To Date	Previous	Delta	To Date	Previous	Delta	To Date	Previous	Delta	To Comp	At Comp	Var Rate	ToComp	AtComp
Project No.: JOBN001 Job Number 01																			
COSTCODE02	CT	ACTIVITY02	100.00%		5000.00	50.00	2.00		100.00		100.00	48.00		48.00	45.92	45.48	-4.52	4500.00	4548.00
COSTCODE03	CT	ACTIVITY03		KG															
COSTCODE03	CT	ACTIVITY01		KG														78.00	78.00
Project Total					5000.00		2.00		100.00		100.00	48.00		48.00	45.92	45.48	-4.52	4678.00	4626.00
Project No.: JOBN002 Job Number 02																			
COSTCODE01	CT	ACTIVITY04	100.00%		220.00	2.20									2.20	2.20		220.00	220.00
COSTCODE02	CT	ACTIVITY06		%								64.00		64.00				-64.00	
COSTCODE03	CT	ACTIVITY06		KG															
Project Total					220.00							64.00		64.00	2.20	2.20		166.00	220.00
Project No.: JOBN003 Job Number 03																			
COSTCODE01	CT	ACTIVITY07	100.00%		100.00	1.00									1.00	1.00		100.00	100.00
COSTCODE02	CT	ACTIVITY08		%															
COSTCODE01	CT	ACTIVITY09		KG															
COSTCODE02	CT	ACTIVITY09																	
Project Total					100.00										1.00	1.00		100.00	100.00

For more information contact:



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