

# enTIRE

INTELLIGENT TYRE & RIM MANAGEMENT SOFTWARE

## WHO IS VEHICLE MANAGEMENT CORPORATION (VMC)

**Vehicle Management Corporation is a software development company that specialises in tyre, rim and vehicle management systems.** With an extensive development history VMC has all the expertise required to provide our users with the most advanced, powerful and efficient tyre and rim management software available today.

The flagship application, enTRE Wheels, has been designed for tyre users and manufacturers in mind to assist the reduction of tyre costs and increased safety by providing a user friendly management system that is relevant and effective. enTIRE Wheels has been in successful field operation for over 15 years in the mining and transport industries with implementations throughout Europe, Australia, Asia, New Zealand and Africa.

VMC provides ongoing development of enTIRE, incorporating as many of our client's requests as possible, while continually advancing and embracing new technologies. This is vitally important when considering any tyre management solution as operating systems and technologies change so quickly.

**VMC is completely independent from all tyre and rim suppliers and service providers.**

## ENTIRE WHEELS – TYRE AND RIM MANAGEMENT SOFTWARE

enTIRE Wheels is a Microsoft Windows based computer program that tracks the performance and stock levels of a fleet of tyres and rims. It will also report on vehicle down time associated with tyre and rim issues. enTIRE is well validated and features a user friendly drag drop interface allowing relatively inexperienced users to easily input information into enTIRE by simply dragging and dropping tyres, rims or assemblies in a single screen.

enTIRE features a rich set of reports and on screen queries that can be used to analyse the performance of tyres and rims belonging to a vehicle fleet. enTIRE Wheels features comprehensive rim tracking, which along with tracking performance can also assist the customer to manage rims safely and effectively.

enTIRE Wheels will provide extensive information as to the:

- Total hours, distance and tonnes tyres and rims are achieving
- Wear rates by tyre brand, size, type, vehicle and position
- Cost per hour, distance or tonne
- Location and status of all tyres and rims (including those away for repair or recapping)
- Deliveries of tyres and rims
- Status of rim tests and inspections
- Failure reasons, lost tread value
- Expected tyre usage
- Warranty claims
- Complete detailed history of tyres and rims



All in all, enTIRE Wheels can help reduce overall costs and assist in identifying tyre, rim and vehicle problems.

## AWARD WINNING TYRE AND RIM MANAGEMENT SOFTWARE

enTIRE Wheels was selected as the winner of the 2005 AIIA iAward in the category of the "Best Industrial Software Application".



## WELL SUITED TO LARGE AND SMALL CUSTOMERS OF ALL TYPES

enTIRE Wheels is designed to manage the tyres and rims of both on-road and off-road fleets, and is highly scaleable, allowing a wide range of deployment options. enTIRE Wheels can be installed on a single laptop or PC for use on a small site, or for a tyre engineer who frequently visits sites. In the case of larger customers with multiple sites enTIRE Wheels can be run in client-server mode, with the database residing on a server and multiple users accessing the data from remote sites. enTIRE Wheels can comfortably handle very large volumes of information due to clever design and use of the Microsoft SQL Server database.

enTIRE Wheels has also been customised to run under the Citrix/Microsoft Terminal Services environment which dramatically reduces the required bandwidth required, making enTIRE Wheels ideally suited to managing information for customers with large fleets around the world.

One example of an enTIRE installation has the enTIRE database located on the east coast of Australia with users throughout Australia and Indonesia. All data entry is performed at a single point (in Indonesia), the other users being connected to enTIRE with permissions ranging from read-only and reporting access to full system access.

## EASY TO USE

enTIRE Wheels utilises “drag drop” style data entry, providing the user with a user friendly interface that will track tyre location and performance by simply dragging tyres onto functional regions on the screen. This means that even relatively inexperienced operators are able to operate the system quickly and efficiently. enTIRE Wheels can be configured specifically to your requirements, including or excluding various features. Comprehensive online help is also available to the user at any time.

## FOCUS ON DATA INTEGRITY

One of the key philosophies behind enTIRE Wheels is the accurate recording of information. Accuracy of the information within any system is paramount. If the information can not be trusted then any output will be questionable. enTIRE Wheels has a very strong focus on ensuring the information within the database is validated during input and stored securely in well defined structures. This results in a highly reliable system with high data integrity.

## MAKE INFORMED DECISIONS

There are many decisions that need to be made to obtain maximum performance from your fleet of tyres and rims. enTIRE Wheels provides you with critical current and historic performance information so that you can make

informed decisions about your tyres, rims, and operational or vehicle related issues. enTIRE Wheels is a powerful management tool that you can use to maximise the performance of your tyres and rims, minimise these related costs and identify current or potential problems.

## TRACK VEHICLE DOWN TIME

At the centre of enTIRE Wheels is the tracking of vehicle down time. Tyre and rim problems can cause vehicle downtime and therefore impact on production. enTIRE Wheels accurately tracks vehicle downtime associated with tyre and rim problems or maintenance, providing sufficient information to make informed decisions, to correct or improve the situation.

## ANALYSE TYRE AND RIM PERFORMANCE TO A VEHICLE POSITIONAL LEVEL

Tyre and rim wear information can be related to a vehicle, group of vehicles or positions on those vehicles. enTIRE Wheels can produce detailed reports regarding the wear rates achieved right down to a positional level allowing management to determine potential problems relating to a tyre type, vehicle or operating environment.

enTIRE Wheels allows you to easily evaluate the percentage and hours distribution of a batch of tyres across all positions. This is important for evaluating the performance of a batch of tyres as this will depend on the positions that each tyre has been fitted to.

## MANAGE YOUR TYRE AND RIM STOCK

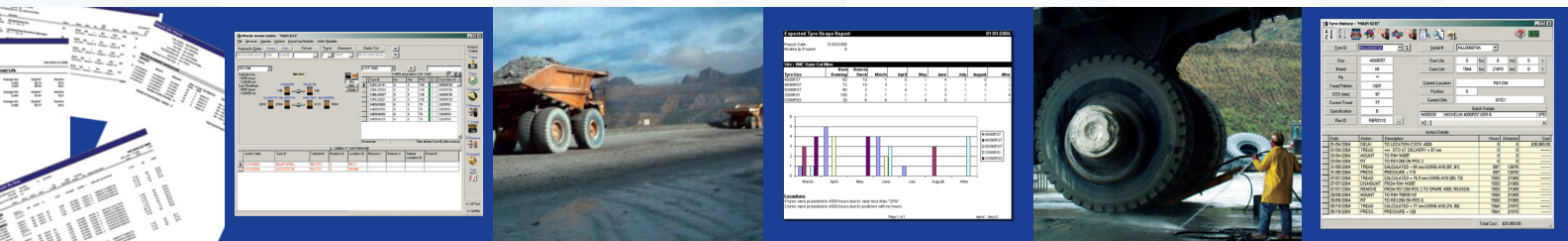
enTIRE Wheels tracks your stock of tyres and rims, providing up to date stock levels at any time. enTIRE Wheels tracks each item as it moves between locations on the current site, onto other sites, or other off-site locations such as at repairers. At any time, the user can report on the location and condition of tyres and rims used on their site.

## MONITOR TYRE PRESSURE READINGS

enTIRE Wheels records complete details of all pressure readings entered into the system, allowing the user to enter both pressure and temperatures. Recommended pressures are also stored. The system can then be used to identify leaky tyres or rims, and evaluate the effectiveness of, or potential issues with the tyre pressure maintenance performed on site.

## IDENTIFY UNEVEN WEAR

enTIRE Wheels can record up to five tread readings across the tread of a tyre. By analysing the tread depths across the tyre, management can determine alignment or wear problems due to the vehicle position or haul road conditions.



## EVALUATE TYRE AND RIM PERFORMANCE

Extensive tyre and rim performance information as well as a comprehensive history is stored for each item. Various statistics are calculated including hours per unit of tread, distance per unit of tread, tread lost, tyre case life, repair life, recap life etc. enTIRE Wheels can present you with a true cost per hour, distance or tonne for each tyre, rim or batch.

## ANALYSE TRUE TYRE AND RIM COSTS

True costs are difficult to analyse and can involve the cost of a tyre or rim, repairs, recaps etc. Income from warranties and sale of scrapped or used tyres or rims can be subtracted to obtain a true cost of purchasing that product. Downtime due to tyre or rim problems should also be taken into consideration. Whichever way you decide to determine the cost of a tyre or rim to your organisation, enTIRE Wheels will allow you to make an informed decision.

## MANAGE TYRE AND RIM WARRANTY CLAIMS

Warranty claims require justification so that operational problems can be identified and separated. When justifying a warranty claim, enTIRE Wheels can provide the user with a complete, accurate history of any tyre or rim in the system including pressure and tread readings, hours / distance / tonnes, removal reasons and rim tests.

enTIRE Wheels can also analyse the difference between your claim amount and settled amount, to be used when negotiating with suppliers. Photographs of tyre or rim damage can be stored within enTIRE and printed out along with the tyre history record for manufacturer appraisal.

## MANAGE TYRE PERFORMANCE CONTRACTS

enTIRE Wheels can associate the performance of tyres to a "performance contract" which will evaluate all tyres purchased under the contract and display up to date feedback to management as to the progress of each manufacturer.

## FORECAST YOUR TYRE USAGE

Forecasting tyre usage is one of the most critical aspects of tyre management. enTIRE Wheels will forecast tyre usage based on wear rates or hours/distance expected by the tyres to give clear picture of expected tyre replacements reported graphically by month.

## PROVIDE TYRE AND RIM SUPPLIERS WITH CRITICAL PERFORMANCE INFORMATION FOR PRODUCT MODIFICATION

Tyre and rim manufacturers are always interested in improving their products and often rely on their customers to provide accurate performance information to them.

Providing manufacturers with performance information about their product will allow them to improve their tyres or rims and the service to your organisation.

## RIM SAFETY

Safety at a mine site is of increasing concern, not only for the safety of individuals but also the cost of managing the accident and the associated down time. A tyre or rim explosion can severely injure or kill any person in the vicinity of the explosion. The costs associated with such an accident can be considerable, and can include the legal liability of the operation.

Monitoring the life and condition of each rim used on a site is only the start. enTIRE Wheels maintains a full history and condition on each rim including:

- Testing records and reference numbers
- Pressure history
- Inspection results
- Recommended life of each rim
- Component tracking and matching
- Repairing (grit blasting, valve replacement etc)
- Mounting history
- Warranty life surplus
- Identifying rims approaching or exceeding their recommended life before inspection.

## NEGOTIATIONS WITH TYRE AND RIM SUPPLIERS

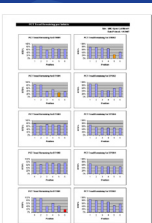
The cost of purchasing a tyre or rim is only the start of the cost in running that item at your site. Although some tyres or rims may be purchased at a reduced cost to other brands, other factors should be considered including warranty claims, repairs and impact on vehicle down times. enTIRE Wheels keeps track of all costs and events that can occur to a tyre or rim so that performance and cost issues can be negotiated with your tyre suppliers.

## FELIXIBLE USER SECURITY LEVELS

enTIRE Wheels is fully password protected, and allows different levels of access depending on the requirements of the user, ranging from full permissions to complete read only mode.

## FULLY AUDITED

enTIRE Wheels is audited, tracking every addition or adjustment made in the system and marking each change with the users name, date and time. This discourages people with access to the system from falsely modifying the data within it, even if they have the appropriate security level. As tyres and rims constitute the second largest cost in running a mine vehicle, an accurate audit trail is vital for the integrity of the system and to satisfy the audit requirements of your organisation.



## RICH SET OF REPORTS

enTIRE Wheels is supplied with a rich set of reports which have been developed and enhanced over the years with the input of our customers. Current reporting categories include stock management, fleet surveys, performance tracking, forecasting, along with detailed reporting of the history of all tyres and rims. New reports are often developed as required to match customer requirements.

## FLEXIBLE EXCEL REPORTING TOOL

enTIRE Wheels also includes a fully customisable reporting tool – the Dynamic Excel Reporting Module. This allows the user to select any one of over 130 fields and define their own filters and sort orders. The information is then written directly into Microsoft Excel, allowing the user to manipulate, chart and distribute this information as they wish.

## INTERFACING INTO OTHER SYSTEMS

Interfaces into other systems can be written where required, allowing the sharing of information between enTIRE Systems and other systems used on site.

## SUPPORT

enTIRE Wheels is designed to be managed completely in-house, by the customer, with no intervention from VMC staff. There are however occasions when support is required, whether it be guidance, or assisting with data modification or ad-hoc information requirements. We understand that urgent information requirements occur frequently and will assist the customer in generating this information when required.

### SUPPORT INCLUDES

- Highly responsive assistance via telephone and email
- All updates released for the enTIRE software during support period
- Assistance with the ad-hoc extraction of information as required

Various support packages are available from VMC depending on your individual requirements.

## ENTIRE CONSULTING

Vehicle Management Corporation specialises in the development of tyre, rim and vehicle management systems, and remains independent from suppliers and consultants. Individuals and organisations that have completed our comprehensive training in all enTIRE products are authorised to become enTIRE Consultants, providing training, report writing and support to our clients.

Date	Action	Description	Hours	Distance	Cost
01/04/2004	DELIV.	TO LOCATION C/STK 4000	0	0	\$26,860.00
01/04/2004	TREAD	==> OTD AT DELIVERY = 97 mm	0	0	.....
03/04/2004	MOUNT	TO RIM 'M005'	0	0	.....
03/04/2004	FIT	TO RD1268 ON POS 2	0	0	.....
31/05/2004	TREAD	CALCULATED = 84 mm USING AVG [87, 81]	897	12676	.....
31/05/2004	PRESS.	PRESSURE = 115	897	12676	.....
07/07/2004	TREAD	CALCULATED = 76.5 mm USING AVG [80, 73]	1500	21089	.....
07/07/2004	DISMOUNT	FROM RIM 'M005'	1500	21089	.....
07/07/2004	REMOVE	FROM RD1268 POS 2 TO SPARE 4000. REASON	1500	21089	.....
29/09/2004	MOUNT	TO RIM 'RBR0110'	1500	21089	.....
29/09/2004	FIT	TO RD1294 ON POS 6	1500	21089	.....
05/10/2004	TREAD	CALCULATED = 77 mm USING AVG [74, 80]	1564	21815	.....
05/10/2004	PRESS.	PRESSURE = 128	1564	21815	.....

## FURTHER INFORMATION

Further information can be obtained from Vehicle Management Corporation or an authorised consultant in your region.

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