



OEM Join Industry Titans At Summit

OEM's best visit the Windy City to display their cutting-edge technology.

Chicago, Illinois has played host to this year's Passenger Rolling Stock Maintenance Summit, which brought some of the biggest names in rail together under one roof.

Many of the largest suppliers of rail sub-systems in the world made an appearance, alongside senior decision makers from railway operators and transit authorities from North America, South America, Canada and Europe. The summit provided a chance to discuss the realities and challenges of rolling stock maintenance, as well as where the future of the industry might lead.

And for those who visited stall thirteen, it was also a chance to put a face on

the technology that's in so many of their trains.

When OEM's CEO James McLeod travelled to Chicago with North American Representative Eric Schook, he met many of the companies that rely on OEM's compact silver boxes on a daily basis.

OEM's programmable controllers are found throughout trains all across the globe, with over thirty-five thousand systems present across twenty-four countries. The OEM name is well recognised for its cutting-edge technology and custom solutions.

The programmable controllers and remote I/O devices that OEM



develop, program and produce serve as core components for many of the sub-systems within trains around the world. Not only do they enable applications like air-conditioning, doors and brakes to function, they also collect and transmit data about the performance of these systems.

The data that OEM's devices accrue is crucial to Condition Based Monitoring (CBM), which is the practice that underpins modern rolling stock maintenance.

CBM allows rail operators around the globe to dramatically increase the accuracy of

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NORTH AMERICAN PASSENGER

Rolling Stock Maintenance Summit 2018

MARCH 27-28, 2018 - CHICAGO, IL

OEM Unveils Cutting Edge In Programmable Controllers

Compact, Flexible, Reliable – the PC2100 is the latest and greatest general-purpose rail PLC.

OEM has launched their PC2100 unit, the latest in the PC2 series of programmable controllers.

The PC2100 is an ideal multi-purpose controller. Its compact design and flexible functionality make it suitable for a wide range of rail applications including, but not limited to; Passenger Vehicle CBM, HVAC control systems and onboard controls for fire protection, power packs and doors.

Rugged and reliable, the PC2100 controller is built

to comply with strict EN 50155 railway standards. This guarantees unimpeded function in extreme temperatures, resistance to shock and vibration, and immunity to static discharge, electrical surges and radiation.

The PC2100 possesses 7 digital inputs, 10 digital outputs, 7 universal inputs, 2 analogue outputs and 2 relay outputs. In addition, the controller can be expanded further by connecting OEM's RIO2011 Remote I/O Expansion Module. A



backlit LCD screen and tactile keypad provide the sturdy user interface required for a life on the rails.

The PC2100 controller is easily programmable through the use of OEM's

IEC61131-3 suite. C programming is also natively supported.

The PC2100 is purpose built to withstand the rigours of the rails. Visit the OEM website for further details.

Full Steam Ahead At OEM With New General Manager

OEM has entered a period of unprecedented growth, expanding its operations both domestically and abroad. Spearheading this expansion is OEM's new General Manger, Lee Koutsos.

Lee has a strong background in manufacturing operations and strategic planning, with almost twenty years of experience behind him. He holds a Bachelor's Degree in Engineering from the University of Newcastle, as well as a Master's

Degree in Business Administration from Deakin University. In addition, Lee is a Prosci certified Change Practitioner.

In the six months since his arrival at the company, Lee's extensive experience and expertise has already proven invaluable to OEM.

As General Manager, Lee provides a steady hand and a consistent vision, guiding the company towards an ambitious future whilst



maintaining the solid foundation that OEM was

built upon – a talented and agile team that is constantly innovating.

OEM Monitoring Technology Saves Money, Improves Safety

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maintenance performed on their rolling stock. This both reduces operating costs for companies, as well as increasing the standard of safety across their fleet.

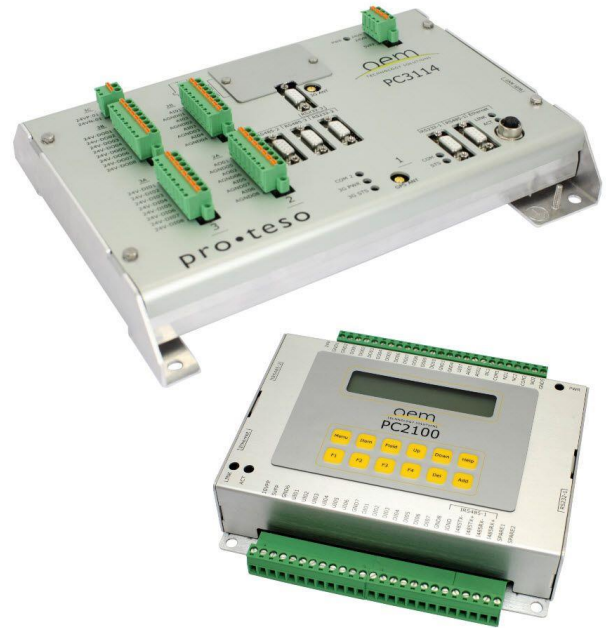
As CBM now forms the core of modern rolling stock maintenance, it was understandably the primary focus of this year's Rolling Stock Maintenance Summit.

At its most basic level, CBM uses the data recorded by devices like OEM's programmable controllers to monitor minute details about the operation of train sub-systems like doors and speedometers. The slight gradual degradation in the opening and closing speed of door, for instance, might indicate that a specific component is suffering wear and tear

and requires replacement.

Where CBM has truly changed the maintenance game however, is when this data is collected and analysed over an extended period.

By observing trends and patterns within the data, it becomes possible to reliably predict equipment failures in specific parts of a train's sub-system. This can save a company a tremendous amount of money, as it removes the need to keep a large store of spare parts on hand. Parts can instead be ordered on an as-needed basis. As an added benefit, when failure points can be reliably predicted, each component can be utilised to its absolute



maximum potential before it is replaced.

In addition to the benefits it provides to an operator's bottom line, this style of maintenance also improves safety, as systems are predictively maintained rather than reactively repaired.

The widespread adoption of CBM provides an exciting opportunity for OEM. Already industry leaders with their programmable controllers and remote I/O devices, OEM is poised to reach even broader markets as the demand for their product rises.

OEM is well positioned to meet this new challenge. An inhouse team designs, programs and manufactures all of

OEM's products, ensuring the highest level of quality and enabling rapid responses to change within the industry.

In addition to providing the programmable controllers vital for collecting and transmitting the data CBM systems require, OEM also possesses the infrastructure to store client's CBM data. This service, known as the OEM Cloud, enables customers to access their accrued CBM data at any time they wish to use it for analysis.

As a leader in the field, OEM were proud to co-sponsor this year's Passenger Rolling Stock Maintenance Summit.



The Magic In The Mundane

Peer behind the curtain and see how OEM Technology Solutions is building the innovative systems of tomorrow in today's trains.

We live in a world of technological marvels. I can step onto an aeroplane and be whisked to the opposite side of the globe inside of a day, or talk with a friend in Italy, instantly and at any time. The largest library of knowledge in existence is available to me at any moment, in a device that fits in the palm of my hand.

And we take it all for granted.

The little wonders that surround us every day just blend into the background. When everything just works, it's easy not to think about the complex systems running behind the scenes that make the magic happen. So, when an eight-car train rolls up to a smaller station and only the doors that are adjacent to the platform open, passengers don't bat an eye. They step out and move on with their day, quite oblivious to the impressive feat of engineering they just witnessed.

The example above is actually a surprisingly common problem. As cities sprawl outwards they begin to encompass what was once semi-rural territory. Rail operators



then extend the length of their trains to accommodate the additional influx of passengers but, as is so often the case, infrastructure lags behind and the platform remains too small to fit all of the train's carriages. This leads to a situation where some carriage doors open into the empty air, potentially depositing inattentive passengers onto the tracks.

Obviously, this was a serious safety hazard, but there was no simple solution. Certainly, in NSW, the vast majority of trains servicing these kinds of routes are well over 20 years into their lifespan and were not

built with a modern Train Control Management System. As a result, the problem persisted for years, until OEM was called upon to solve the problem.

Every carriage was fitted with two wireless transmitters, one at either end. This linked each car with the next, creating a WiFi backbone that ran the length of the train. A PC3 programmable controller fitted with a GPS antenna was inserted into every car as well, tracking the position of each link in the chain. This information was then compared with pre-existing geo-fences established at each station.

The end result was that if a carriage was positioned outside of a platform's geo-fence, a signal would be sent down the WiFi backbone to block the door opening signal, keeping that car's doors shut.

OEM Technology Solutions delivered an innovative hardware and software solution. The average passenger may never know the ingenuity that went into ensuring they could safely depart their train. But that's the point; Thanks to OEM, they can trust that whenever they step out of a train, there will always be a platform there to catch them.