

# rail and transportation technologies

**OEM Technology Solutions** is in the business of providing solutions to the Rail Technology market, with a secondary market focus on the application of core rail technology capabilities into the wider transportation sector.



*“I trust OEM – they consistently deliver what they say they will, on time and on budget”*

# oem technology solutions

## overview

OEM Technology Solutions is in the business of providing solutions to the Rail Technology market, with a secondary market focus on the application of core rail technology capabilities into the wider transportation sector.

Specialising in the design and development of high technology products since 1993, OEM Technology Solutions combines technology, and innovative engineering and design services to provide turnkey solutions for our clients.

OEM Technology Solutions services include user requirements analysis, product specification, electronic hardware and software development, mechanical design and manufacture, production and testing, documentation and long term support.

## capabilities

- Design and development to railway and transportation standards
  - Electronics (EN50155)
  - Software (EN50128)
  - Mechanical
- Integration/verification/validation
- Manufacturing and production
- Custom designs

## products

### Control and monitoring systems for:

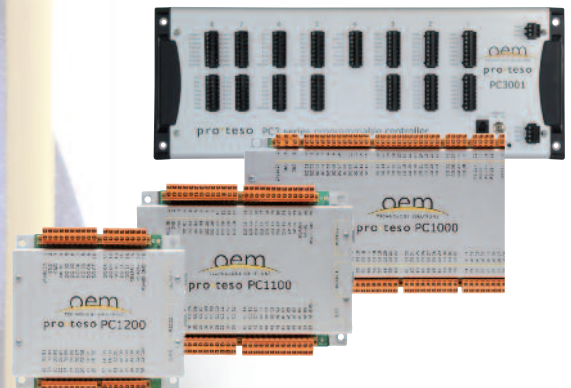
- Air-conditioning
- Doors
- Couplers
- Lighting
- Fire detection

### Embedded computer solutions for:

- Electronic train management systems
- Telecommunications and telemetry
- Driver advice systems
- Video surveillance systems
- Passenger information systems

### Turnkey solutions for:

- Speed measurement with axle mounted and contactless speed sensors
- Event and juridical data recording
- Speed indication
- Vigilance control



## applications

### Train HVAC controls



The Heating, Ventilation and Air Conditioning (HVAC) control system within an onboard railway application needs to be reliable, accurate and resistant to shock and vibration. Rail passengers demand comfort whether the temperature is extremely hot or cold outside the vehicle. The train saloon should be a place of comfort and relaxation. The engineers at OEM Technology Solutions are experts at understanding the requirements of rail HVAC control systems and have applied innovative techniques in the design of our electronic hardware and associated firmware for the controller. The result is a complete range of HVAC controllers suitable for the railways industry. All controllers have been designed to comply with the strict railway standard EN50155 for electronic equipment used on rolling stock.

### Onboard bus computer



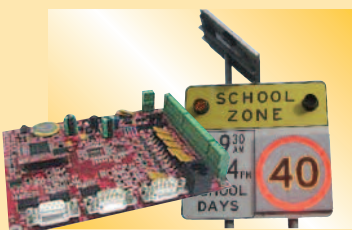
Our client required an Onboard Bus Computer that was designed for the harsh environment while still delivering the high performance that the bus priority system needed. The computer sends priority requests which provide the catalyst to alter traffic signals to ensure the bus maintains the scheduled timetable. The Onboard Bus Computer interfaces to range of systems including passenger displays, voice announcements, GPS and the cellular 3G network. Based on an Intel Atom microprocessor the Onboard Bus Computer can withstand temperatures from -40 to +85 Deg C. The inbuilt power supply has unique features which are controlled by a PIC microprocessor to ensure that the device is safely powered. The client now has an onboard computer system which will see that all the bus fleet arrives on time.

### Train communications and telemetry



Asset utilization and incident management are major issues for the modern rail operator. Passengers expect the trains to arrive and depart on time. To ensure that this happens and that unexpected incidents are handled in the most effective way train borne communication and telemetry systems are essential. OEM Technology Solutions along with our partners designed and developed an Intel Dual Core computer system with integrated cellular 3G and 802.11 WiFi communications for the application. The system supports data transfers such as timetable information, video images, alarms, train performance metrics, events and train location between the train set and the operators shore based infrastructure.

### School speed limit signs



The Roads and Traffic Authority (RTA), in conjunction with the NSW Police Force and the Department of Education and Training, introduced a number of initiatives to improve the safety of children around schools over past decades. One of which was the introduction of school zone signs with flashing lights to notify drivers to slow down to 40Kph during school times. OEM Technology Solutions was awarded the contract to design and develop the integrated electronic sign controller for the sign. The controller monitors the condition of the sign including LEDs, batteries and solar arrays. The controller is in constant communications with the traffic authority via the cellular 3G network.

## key customers

- Bombardier Transportation
- Siemens Transportation Systems
- Rotem
- Kawasaki Heavy Industries
- Downer EDI Rail
- Stadler Rail
- Thales Australia
- Sigma Coachair Group
- Noske Kaeser
- Vossloh
- Tyco Traffic and Transportation
- Yarra Trams
- Transdev
- Railcorp
- Pacific National
- Australian Railroad Group

## industry references

- Waratah Trains, Downer EDI Rail, Sydney, Australia
- MTRC West Island, Hong Kong
- School Zone Signs, Sigtec/ RTA, NSW, Australia
- Turbostar, Bombardier Transportation, UK
- Onboard Bus Computer, Tyco/RTA, NSW, Australia
- TTY, Taipei, Kawasaki Heavy Industries, Taiwan
- MBTA, Hyundai ROTEM, Boston, USA
- Electronic Speed Limit Sign, Dept Transport / Tyco Traffic, VIC, Australia
- KL Kelena Jaya, Bombardier Transportation, Kuala Lumpur, Malaysia
- Tango Variobahn, Stadler, Germany
- Desiro DMU, Siemens Transportation Systems, UK
- Tangara Upgrade, Railcorp, Sydney, Australia

## quality approvals

- QMS ISO9001:2008
- EMS ISO14001:2004
- OHS ASI8001:2007



## partners

- Mikro Elektronik Nurnberg  
Embedded Computers for rail  
and mission critical
- Digi International  
Wireless communications
- Deuta-Werke  
Indicators, terminals, sensors,  
recorders, video systems
- ICSTriplex ISaGRAF  
IEC 61131 and  
IEC 61499 software



## awards

- Engineers Australia – Control Systems  
and Communications 2008
- Engineers Australia – Software  
and Embedded Systems 2008



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