developing world: sanitation and transportation. Water-related diseases kill thousands of people each day. Moreover, water sources can be miles away from the home, and people must walk these distances carrying heavy water vessels. For the same effort required to walk three miles, a person can easily travel 15 miles by bike. The Aquaduct is designed to allow a person to sanitize and transport water simultaneously.

As the rider peddles, a pump attached to the pedal crank draws water from a large tank, through a carbon filter, to a smaller clean tank. A clutch engages and disengages the drive belt from the pedal crank, enabling the rider to filter the water while traveling or while stationary. The clean tank is removable and closed for contamination-free home storage and use.

The entry placed first in the contest and the $5000 prize money will be donated to Kickstart, a company focused on water solutions for the developing world.

The aquaduct concept both transports and filters water.

Mobile water filtration for the developing world.

The Aquaduct is a pedal powered concept vehicle that transports, filters, and stores water for the developing world. The functional model was designed and constructed over a three week period, for the Innovate or Die contest hosted by Google and Specialized.

The Aquaduct carries up to 20 gallons of water, the daily amount necessary for a family of four.

Dear Readers,

Welcome to the third edition of the ifm newsletter for the mobile industry.

In this edition we are previewing our latest exhibition SPS Drives. We hope you can find time to join us there where we will officially launch our new 32-bit controller for mobile applications. In case you cannot plan a trip to the show you will also find a product bulletin inside this edition informing you of the key features and benefits. If you would like to know more about this exciting new addition to our range, please do not hesitate to contact your local ifm branch and arrange a demonstration.

Our application feature this time is a clever use of the CAN protocol SAEJ1939 on trucks. Under body weighing is a common requirement on trucks and our controllers can provide a cost-effective method to access weigh data direct from the chassis manufacturer for overload detection.

So it only remains to say thank you in advance for your attention, I hope as always that you find the newsletter interesting and enjoyable. We will be back with newsletter 4 in March next year. In the meantime please don’t forget if you have any ideas for the newsletter or feedback on any of our editions it would be greatly appreciated.

Craig Lysons
Mobile Industry Sales Manager
ifm electronic Ltd
APPLICATION

ifm controller is overload protected

Nowadays we are all asked to squeeze more out of the same resources in a drive to increase efficiency and reduce cost. It is no surprise that machinery and vehicles are being tasked with the same goals and that the productivity of any capital asset is right at the top of priorities.

When it comes to machines that are used daily on the highway there are strict laws governing the payload capacity of the vehicle. It is well documented that these types of machine are often overloaded despite the highway authorities imposing large fines on users that either deliberately or accidentally ignore the weight limits. Any saving on increased efficiency can soon be wiped out and additional costs incurred if these easily avoidable financial penalties are incurred.

In most of these applications the driver or operator has available a weigh system which informs them of the payload level and it is the responsibility of the operator to take care not to overload the vehicle. It is possible however that the system is ignored or overlooked due to time or productivity pressure.

The most reliable method to avoid this scenario is to remove the overload decision from the driver or operator and detect the vehicle weight electronically. The driver can be warned of the impending overload visually and audibly and take the necessary action. Furthermore if the approaching overload limit is ignored then the machines hydraulic power can be interrupted to prevent further loading.

By utilising the cost effective and programmable ifm controller CR2500 and the know-how of the ifm application engineering team, the company Muni-Serv have been able to implement an overload detection system and offer these valuable features to their customers.

Throughout its history, that spans more than a decade, Muni-Serv Ltd. has evolved and expanded rendering it the largest independent supplier of refuse collection vehicles in the United Kingdom. The company, which operates from its headquarters in Widnes, Cheshire and other strategically located sites across the United Kingdom, offers total waste management solutions whether it being manufacture, sales, servicing or installation to local authority councils and private customers across the United Kingdom. Apart from its core activity of being the only certified Ros-Roca body supplier in the country, Muni-Serv is also an authorised engineering support agent for industry names such as Hiab and Multilift, leaders in de-mountable bodies and cranes as well as bulk waste trailer manufacturers Legras.

Muni-Serv is often tasked with solving challenging operational issues for their customers such as a dynamic overload detection system. Ilias Tsiotas, Project Development Manager, explains why and how the system is implemented and used. In order to safeguard against an overload condition our customers are often interested to have a warning system fitted to the vehicles to assist the operator in preventing overload.

It is common to install a weigh system under the container body but these systems can have some disadvantages for overload detection. For example these systems are normally used for visualisation and information purposes and they have no automatic interlocking with the machine operation, they rely solely on the operator.

By accessing the truck manufacturers SAEJ1939 CAN network it is possible to...
access weight information and determine the individual load of each axle. The data is a by-product of air suspension systems, found on many modern heavy trucks. The weight information is analysed along with the vehicle speed and some other criteria to reliably detect an overload condition.

The user can program the weight limit and other settings by means of a hand-held programming unit, meaning that the vehicle can be fully flexible on the type of load and capacity it will be used for. The means of the interlock to the loading system is also flexible. In the basic format a simple lamp and buzzer warn the operator that the weight limit is either reached or nearly reached. If needed the system can then, after the next loading operation is finished, automatically switch off the hydraulic power for the lifting mechanism ensuring that no more than the vehicle limit is loaded.

The unloading of the vehicle, at the local recycling or waste depot, is unaffected and once a complete unloading cycle is finished and the gross vehicle weight returns below the limit the system is reset and loading can begin again.

This overload system has proved very reliable and popular combining the latest technology with the necessary operator functions at a very cost-effective price.

More details at:
www.ifm.com/uk
www.muniserve.com

**COMPETITION**

**Win a navigation system!**

**Your chance to win a Garmin eTrex Handheld GPS device**

All of us at ifm decided that after the good work Aquaduct are doing with their pedal powered sanitation system, we should all get out on our bikes and do our bit for the environment. To make the ride a little more enjoyable (and to make sure you find the way home), here’s your chance to win a Garmin eTrex Venture handheld GPS navigator.

For your chance to win, answer the following question;

What ingress protection rating does ifm’s new mobile camera system, the O2M, have?

To email your answers please see the contact section on page 4 to find the relevant ifm office’s email address. Then simply email with the reference “GPS” included in the subject line. Winners will be drawn in December.

Alternatively fax your answer with your contact details to the fax number shown on the same page.

**PRODUCT**

**ifm’s new 32-bit Controller**

The requirements on the control modules set by the mobile vehicle industry have steadily increased in the past few years. More and more proportionate functions have to be implemented simultaneously for optimum machine functions. The new 32-bit ClassicController was specially developed for these requirements.

It has 16 multifunctional inputs and outputs. The inputs can be configured as digital, frequency or analogue input with diagnostic function. The outputs can be configured as digital or PWM output with diagnostic capabilities either with or without current control.

Furthermore, the 32-bit ClassicController has four CAN interfaces with CANopen and SAE J1939 protocol. They support all important bus protocols and baud rates as well as the transparent or preprocessed data exchange. Programming is made with CoDeSys according to IEC 61131-3.

The controller for mobile vehicles is vibration and shock resistant, features a wide temperature range (-40...85 °C), a compact housing with protection rating IP 67 and holds the e1 type approval of the German Federal Office for Motor Traffic. The operating voltage is between 10 and 32 V.

By means of a reverse-polarity protected central plug the integrated control electronics provides all the necessary connections for the inputs and outputs, communication and programming.

More details at:
www.ifm.com/uk
SPS Drives
Visit ifm electronic at the SPS/IPC/DRIVES 2008: hall 7a, stand number 302.

For the 19th time in as many years, the SPS/IPC/DRIVES show in Nuremberg is almost upon us. From the 25 – 27 November ifm electronic will be exhibiting in hall 7a, stand number 302.

On display, amongst other innovations, will be ifm’s new programmable controller for the mobile machinery industry. Its 32-bit processor is able to handle 16 inputs and 16 outputs including 4 CAN interfaces.

If you have any questions about this product or any other ifm product for the mobile machinery industry, please make an appointment to see us at the show using the details on the right of this page, or simply visit the stand and one of our representatives will be pleased to help.

You can find more details at:
www.ifm.com
www.mesago.de/en/SPS/main.htm

Camera system O2M
Ethernet interface for easy device connection

In almost all mobile vehicles, users today use displays for indicating vehicle information. At the same time camera systems monitor the operating areas in an increasing number of applications.

The new camera system O2M from ifm can be directly connected to the PDM360 dialogue monitor with graphic capability and colour display using integrated Ethernet interfaces. This eliminates the need for a separate monitor.

The robust IP 69K housing enables mounting outside the vehicles and machines. The device can be mounted directly onto the mobile vehicle via an adapter system. With temperature controlled window heating the camera lens can be defrosted in case of extreme weather conditions.

The modern CMOS sensor, the powerful controller and the integrated firmware are the basis for image capture and processing.

The digital capturing and transmission of the image data enable scaling and free positioning of the camera image. With a splitscreen representation, up to four camera images can be simultaneously displayed on the PDM360 dialogue monitor. In addition, the PDM360 can be used to store individual images on a compact flash card. They can, for example, be used for protocolling.

Parameter setting of the camera functions and data transmission are done directly from the PDM360 application programmed with CoDeSys. Using function blocks, the displayed camera images can be mirrored, rotated, zoomed and scaled.

The O2M camera is fitted with an Ethernet interface for communication. In contrast to analogue camera systems, the camera image can be shown on any number of displays via a simple Ethernet hub or switch. It is also possible to connect several O2M cameras to a display in this way.

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www.ifm.com

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