

Application Notes...



Self-driving platforms

Goldhofer manufactures a range of load carrying platforms, including heavy duty modules capable of transporting enormous structures weighing many hundreds of tonnes. The platforms were famously featured on the Channel 5 program 'Monster Moves' carrying the control tower for Heathrow's Terminal 5.

Brief given

Among Goldhofer's range are multi-axis hydrostatic self-driving units which can be used either singly or with multiple units in tandem. Controlling a single module is a challenge – controlling and synchronising multiple units is extraordinarily demanding.

The solution

CANbus was selected as the communications bus for the on-board steering, hydraulic level adjustment and diesel engine drive functions. It was also suggested as the best means of synchronising multiple platforms.

Implementation

Each platform includes a CANbus ESX host computer and a further ESX axis control module. The ESX host communicates both with the axis control module and other ESX host modules on as many other platforms as are required, delivering tight synchronisation of movement in a multi-platform system. The ESX host computer controls the steering on each

platform directly, based on information from the other ESX host modules, and from angle feedback signals from the wheels delivered via the ESX axis control module.

The axis control module monitors the speed of each wheel and feeds this information back to the ESX host for automatic throttle adjustment. The CANbus controllers also monitor and control the proportional valves for the hydraulic level adjustment system.

Conclusion

Cost-effective cross-linking of all the CANbus controllers makes it possible to design a fully modular, decentralised control system. With a pair of wires forming the basis of the transmission medium, cabling is kept to an absolute minimum. The high transfer rates of CANbus with excellent transmission reliability ensure all platforms in a system receive control signals at exactly the same time, giving tight synchronisation of movement.

Sensor-Technik

The UK's CANbus specialist

Making the move to a bus-based control system is a big step, but it needn't be a difficult one. Whether you require fully-approved components with a track record, or complete system design, Sensor-Technik has the answer. And we'll be with you every step of the way.

CANbus provides the ideal system for integrating electronic controls into vehicles and machinery, particularly because it's a system which is to ISO standard and which is supported by so many different manufacturers.

ESX Controllers

The ESX family of freely programmable controllers from STW is specially designed for mobile applications such as agricultural machinery, construction equipment, man and material lifts and many other demanding tasks. Robust cast-aluminum housings with an IP65 rating (optionally IP67) offer a high degree of safety in terms of EMC and the extremes of outdoor environments.

The range of CAN controllers includes high performance standard controllers, compact controllers, micro controllers, controllers with data logging capabilities, and controllers offering remote data transfer via GMS/GPRS or the internet. STW also supplies an extensive range of I/O modules and baby board I/O cards, test and simulation boxes, simple displays, and dedicated CANbus cables.

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