ICAS SURFACE COLLISION AVOIDANCE SAFETY SYSTEM

- No Nuisance/False Alarms
- Real Time Full Situational Awareness
- Configurable Guard/Alarm Zones
- Operator Graphical interface
- Automatic Object Detection
- GPS/Compass Heading Sensor
ICAS SYSTEM OVERVIEW

ICAS SURFACE COLLISION AVOIDANCE SAFETY SYSTEM

ICAS now provides customers with a current generation technology at a fraction of the cost of legacy technologies.

ICAS is a critical safety system designed with reliability, robust hardware and production continuity as the key criteria. The GPS – VHF peer to peer system ensures that equipped vehicles and infrastructure are always visible and identifiable to operators via a simple intuitive graphical HMI display.

ICAS is an industry game changing product providing the entire market affordable access to critical safety system. Smart phone development has changed the mobile communications market and ICAS will change the surface collision avoidance market with leading industrial technology at an affordable cost.

SAFETY

ICAS is a dedicated safety instrument independent of all other infrastructure or networks. The system is capable of expansion and accepting of other sensors for data collection but its primary objective is as a safety system to keep personnel safe and prevent damage to assets.

RELIABILITY

The 50 channel industrial GPS provides reliable 3D positioning minimising the need for surface based repeaters, if repeaters are already installed the majority can be integrated with the ICAS product.

ROBUST DESIGN

The robust IP67 marine grade device with incorporated display is designed for the harshest environments and backed with an 18 month warranty providing fleet owners’ confidence that once installed, machine downtime due to a ICAS system failure is minimised and production continuity assured.

FULL SITUATION AWARENESS

Real time situation awareness is critical to an effective collision awareness system, ICAS enhances operator awareness with critical and accurate data including vehicle orientation using a combined GPS/Compass heading sensor.

Vehicle and infrastructure that is within the configured guard and alarm zones are displayed ensuring operators have timely warnings increasing safety, reducing accidents or near misses from insufficient reaction time from lack of situational awareness.
DETECTION

The proven industrial GPS (Global Positioning Systems) technology provides full 360° equipment protection and is accurate to ± 1 metre, it detects the position of all surrounding HV, MV, LV and fixed infrastructure that is also equipped with an ICAS unit within the configured guard and alert zones (up to 20km).

Once detected, the system uses a secure, VHF wireless network in conjunction with pre-configurable and risk assessed equipment alarm scenarios to activate surrounding ICAS systems.

Each ICAS device has a dual channel VHF transceiver with fail to safe functionality, the addition of the VHF transceivers transforms the collision awareness system into a multi-technology solution without the need for additional infrastructure.

OPERATOR GRAPHICAL DISPLAY

Operator display is intuitive and includes:
- Target machine types
- Target machine ID
- Target machine orientation forward-reverse
- Target machine speed
- Machine over speed

The system provides a mix of audio and visual alerts and an operator acknowledgement mechanism.

ICAS PORTABLE UNIT

An ICAS Portable unit is available for use by short term contractors. Simply by fitting the portable magnetic base GPS, VHF antennas and the portable display to the contractors’ vehicle you ensure that all site vehicles are fitted with collision avoidance safety system while on site.

INTERNATIONAL STANDARD

ICAS is designed to the NMEA 0183 standard which allows communication between electronic devices providing compatible with common GPS and mapping products freely available such as the iPhone NMEA server, Google Maps Mobile, GPS Track Maker and VisualGPS a NMEA monitoring utility.

ICAS FILTERS

ICAS filters out non priority targets and only displays the vehicles and infrastructure that may be on a collision course removing the risk, uncertainty and stress related to working and interacting with vehicles in highly dangerous, congested, low visibility and isolated environments.
OPERATOR GRAPHICAL DISPLAY

Although information is data logged by each machine ICAS and data can be retrieved remotely. An optional centralised PC based vehicle tracking and event reporting system is available with data collection via the peer to peer ICAS in vehicle VHF systems, no additional communications infrastructure is required.

DESIGN FEATURES

- Continuous 360° monitoring
- Alarm scenario configuration
- Alarm priority filtering
- Low power consumption
- Easy screen navigation
- Simple installation
- No licensing requirements
- Firmware upgrades over the air

PRODUCT APPLICATIONS

- Heavy vehicle (HV) to heavy vehicle
- Heavy vehicle to light vehicle (LV)
- Medium vehicle (MV) to LV, HV
- Vehicle to personnel
- Fixed and mobile plant
- Advance train warning system
- Rail-track worker warning
- Rail level crossing activation

ICAS TECHNICAL DETAILS

<table>
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<tr>
<th>Feature</th>
<th>Details</th>
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<tbody>
<tr>
<td>Power Supply</td>
<td>12-24VDC</td>
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<tr>
<td>VHF</td>
<td>Dual Transceiver</td>
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<tr>
<td>VHF Frequencies</td>
<td>Configurable from 138Mhz to 174Mhz</td>
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<td>VHF Power</td>
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<td>VHF Licensing</td>
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<td>International Standard</td>
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<td>Warranty</td>
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