COMMAND CENT

A series of government reports generated after a review of natural disasters, including fire and floods, has highlighted the requirement for significant change and improvement in emergency services' communications during life-threatening situations and the importance of interagency communication and cooperation.

The National Safety Agency, an Australian not-for-profit research and development organisation and a leader in development of solutions for emergency management, designed a prototype vehicle known as TRACU.

Over a two-year period, NSA will demonstrate TRACU to local and international agencies and departments leveraging high-capacity broadband data for use on a smart phone for emergency services front line and command personnel. This provides them with access to the right information at the right time.

TRACU's primary role is to provide a mobile command and control vehicle to address all hazards and link all agencies. When strategically activated, TRACU is deployed within the close proximity of the incident to enable trained operators to manage and monitor the event. The events could be fire, flood, tsunami, cyclone, marine pollution, large crowd monitoring, and terrorist action.

In addition, the vehicle provides a facility for communities impacted by emergencies to be able to use their mobile phones to connect to families and services in time of need by using the Wi-Fi services using terrestrial communications or the on-board satellite link. The infrastructure available can also provide more simple tasks, such as enabling a recharge point for mobile phone use.

The vehicle is self sufficient in operational situations where power and telecommunications infrastructure is either non-existent or heavily overloaded. Diesel power, Wi-Fi connectivity, radio telecommunications and satellite connectivity are integrated within the vehicle.

Additional computing power is available using mainframe and distributed server technology providing redundant computer operations, all supported by UPS systems. A 12-volt system is also built into the vehicle. The trailer is heated/cooled by three reverse-cycle inverter air conditioners, and six sets of floodlights are externally mounted on the trailer providing full lighting for large areas at nightfall.

The computer room is separate and adjoined by a fully-fitted command room with touch screens, CCTV to central agency operations teams, and also projected through additional large screens showing a range of services in real time.

The next room contains five operator-based modules, each with five screens providing CAD, real-time public sector streams, TV footage, remote sensor camera feeds, and business intelligence analysis, plus access to specialised incident management solutions to manage incidents.

A large rear door on the trailer opens to provide an overhead protection for operators and four large screens for use by the emergency services personnel for briefings and telepresence meetings. These systems can also be used for public announcements.

Major global technology providers such as IBM, Hewlett-Packard, Cisco, Hino, Cobham, Intergraph, Tait Radio and national companies including Telstra, MaxiTRANS, NewSat and RF Industries have integrated their technology to provide this new state-of-the-art solution.

The vehicle incorporates over 30 screens providing comprehensive intelligence and emergency management capability. Operators will be able to view multiple perspectives including weather location information via cameras, hydrology data, real-time images from emergency services operators' helmet-mounted cameras, dashboards with different knowledge sources, multimedia, and videoconferencing capabilities between the vehicle and the State Control Centre (SCC).

In the Australian marketplace, real-time information is provided by state government agencies, CSIRO, Telstra and partners, and public data feeds including Twitter. Importantly, the vehicle telecommunications provides capability to connect large groups of hand-held radio users to a single consistent messaging system for highly efficient command and control activities.

As a technology platform, the vehicle offers the ideal infrastructure to develop additional systems for both emergency services operators and the public. The two-year period of field trials and deployment will see the addition of:

a. Body-held cameras for real-time transmission of incident images with integrated sensors for blood pressure and breathing monitoring;
b. Google Glass technology for real-time voice-activated instructions and image transfer to the vehicle whilst enabling the operator two-hand freedom to conduct duties;

HINO'S 700 SERIES WAS CHOSEN AS THE IDEAL PRIME MOVER TO HAUL THE NATIONAL SAFETY AGENCY'S MOBILE COMMAND CENTRE TRAILER

HINO

c. UAV devices flying in circuit over the vehicle and incident area providing surveillance intelligence and sensoring information to the vehicle (where conditions permit)
d. UAV providing Wi-Fi connectivity for mobile phones offering extended Wi-Fi technology to complement terrestrial connectivity;
e. Ability to transfer real-time information to be presented on digital signage on trailers positioned for public awareness when, for example, fleeing an incident and requiring directions to safety;
f. At site triage prior to patients being shipped to facilities using on-board CCTV and telemedicine connections at major hospitals in preparation for transmission;
g. Live broadcast to communities centred near the vehicle location for briefing and information from emergency services managers to displaced personnel; and
h. Provision of Wi-Fi and internet to emergency services volunteers housed near the vehicle for communications using emails to their families.

Hino's 700 Series and the mobile command centre are ready for action.

The cabin itself is available in standard roof height and extended roof height versions. The wheelbase is 4005 mm and the standard tare weight is 8185 kg.

The industry has very definite ideas when it comes to the choice between manual or automated manual transmisisons, and it's here that Hino offers two of the best alternatives. For those that prefer the manual transmission with North American heritage, there's the Eaton 18-speed, double overdrive, constant mesh RTLO 18918B manual gearbox. Those that prefer the European style of automated manual can select the ProShift, a 16-speed ZF AS-Tronic that includes the ZF Intarder integral driveline retarder.

With front under-run protection as standard, the Hino 700 Series cab conforms to ECER 29 cab strength requirements. The driver's seat is an ISRI 6860 air-suspended design with integrated seat belt. Air conditioning is standard and the cab provides a single sleeper bunk with black-out curtains around the cab. The headlamps are HID (High Intensity Discharge) units and cornering lights are also fitted as standard. ABS, antilock braking system is also standard.

In addition to cruise control, which is fitted as standard, optional extras include genuine Hino accessories such as a bull bar, side skirts, step cover kit, stone guard, woodgrain dash panel, transmission-mounted power-take-off, satellite navigation system, rear-vision camera plus two additional camera views, and a roof-mounted air spoiler.

The Hino 700 Series is supported by a three-year/500,000 km warranty with an engine component warranty of three years/750,000 km. Standard fuel tank capacity is 700 litres with an AdBlue/DEF capacity of 56 litres.

HINO HAULS FOR THE NATIONAL SAFETY AGENCY

Hino's 700 Series is undoubtedly the flagship model of the Hino range available in the Australian market, and Hino Motor Sales Australia has thrown its support behind the National Safety Agency trial to assist in the project evaluation.

With a GVM of 28,300 kg and a GCM of 72,000 kg, the 700 Series is powered by the Hino E13C VG, six-cylinder, in-line, turbocharged and intercooled diesel engine.

With an overhead camshaft design and electronically-controlled, common-rail, direct injection, this 12.9-litre capacity engine features cooled EGR together with SCR (Exhaust Gas Recycling and Selective Catalytic Reduction) with AdBlue/DEF (Diesel Exhaust Fluid) to meet Euro V emissions legislation.

Hino 700 Series models are powered by either a 321, 331 or 353 kW variant of the E13 12.9-litre engine. The model selected for the National Safety Agency's Mobile Command Centre is the SS 2848 ProShift 16 AIR model. This is powered by the E13C VG 12.9-litre capacity engine, which produces 353 kW (480 PS) at 1,800 rpm. Peak torque of 2157 Nm (ISO NET) is rated at 1,100 rpm.

The 700 Series tandem-drive prime mover is one of nine models in the 700 range, which includes the choice of 4x2, 6x4 and 8x4 driveline configurations, suited to both prime-mover and rigid-truck applications.