

HARD WIRED

All vehicle manufacturers in the police market will eventually move to a wiring architecture that will be as standard as a three pin domestic plug say **Sarah Tottle and Craig Hall**

Cars built for the Swedish Police by Volvo leave the production line fully fitted with all blue light equipment, and police officers are even able to collect the cars from the factory. These vehicles are unique models in their own right, with specifically designed chassis and suspension parts, as well as additional wiring looms, fuse boxes, batteries and alternators to help fit necessary equipment after delivery.

In comparison, the situation is very different in the UK market. In terms of the equipment fitted to police vehicles, the UK has the most advanced vehicles in the world, allowing them to fulfil an ever greater number of functions.

Numerous advanced technologies – including detailed data recording instruments, mobile data terminals, on-board CCTV and automatic number plate recognition (ANPR) cameras – are now being installed in police cars, requiring a high level of detail and complexity for vehicle conversion.

This means that, although Volvo supplies vehicles to all UK police forces, each car must be equipped differently depending on the individual force's requirements and the vehicle's intended role. This situation makes development of a turnkey solution – a single vehicle which could meet the varied and complex equipment requirements of all UK forces – a real challenge.

One Box project

Volvo and Carnation Designs are part of the the One Box project, run by the Association of Chief Police Officers (ACPO) and the Home Office Scientific Development Branch (HOSDB). This project aims to achieve a 'single vehicle architecture', where all manufacturers and suppliers agree upon a common specification for standardised wiring and connection points in the car, to allow plug and play of electronic equipment.

Volvo and Carnation have collaboratively developed a demonstrator vehicle that is an example of how this works. It is hoped that all suppliers will join the ACPO One Box project, deciding on a standard specification



NEW WAY OF WORKING: Volvo and Carnation have developed a demonstrator vehicle that complies with ACPO's One Box project to standardise all wiring and connection points

that will eventually be as common as the three-pin plug on domestic electrical appliances.

Integration and management of auxiliary electronics systems is the greatest challenge to achieving a common approach.

To help address this issue, Volvo Special Vehicles has worked closely with vehicle electronics supplier Carnation Designs. Volvo says this has resulted in an adaptable car to allow installation of police equipment.

Plug and play

Carnation Designs' genisys electronics and power management system allows the installation of a wide variety of equipment, without the need for bespoke vehicle wiring systems.

The Carnation Designs/Volvo CANBus interface, allows the genisys unit to directly communicate with the vehicle's CANBus and manage all electronic equipment. This means the required data is drawn directly from the car there is less need for aftermarket

modification of the vehicle.

Bi-directional communication with the CANBus allows genisys inputs to be taken directly from the vehicle's network via a CAT5 data cable and provides a programmable 'run lock' option. This allows officers to keep the engine running when the keys are removed from the ignition allowing the vehicle to be securely locked while ensuring adequate power to run auxiliary electronics.

As well as helping to make vehicle conversion – and therefore maintenance and repair – easier, the genisys system can be easily programmed to meet individual customers' specific project requirements without the need for significant hardware revisions. It also allows vehicles to be adapted and updated as market trends change, providing a futureproof investment and limiting ongoing costs. ■

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