



While fully autonomous trucks are still a long way off, some of the components which will be needed for them to practically work are already in existence, including fully automated couplings. Lucy Radley profiles two

The potential safety advantages of automated couplings are obvious: no climbing on catwalks, or forgetting to put the handbrake on in the cab, and no grease-slathered airlines to contend with. Perhaps more importantly, in these days when good drivers are at a premium, an automated coupling should be easier to use than its traditional counterpart. And despite the publication of ISO 13044 covering the subject in 2012-13, still innovation is slow.

Research for this feature has only uncovered two complete systems that are designed for road use, although a third - made by German project Aucos for use by tug-shunters within port terminals - may reach a wider market at some point in the future. Although Aucos wasn't prepared to talk at this stage, it's worth looking at the others,

and asking why they haven't yet been widely promoted or adopted in the UK.

The only automated coupling found that is actually in use is VBG Group's MFC (multi-function coupling), pictured p13, which is designed for wagon-and-drag combinations using A-framed drawbars and dollies. Its main components are a specialised wedge-shaped towing 'eye' mounted on the trailer that connects electrical and air services integrated within the coupling box itself - along with hydraulics if specified. The whole thing is operated via a control box in the cab, where the driver remains throughout coupling.

The MFC is equipped with sensors that determine the relative positions of the drawbar wedge and the coupling itself, as well as measuring the distance between them. This information is then relayed to the driver via a screen on the control box to aid the connection. The

system then checks all the necessary components are correctly locked in place; if so, it shows a tick and symbol on the screen to confirm the vehicle is successfully coupled and ready to drive away. Any errors found - either during this process or while the vehicle is travelling - are also relayed to the driver via the control box screen. In case of a serious error that requires the vehicle to stop immediately, a buzzer will sound.

The VBG MFC is nothing new, however. "The system has been out for around 10 years now," points out Howard Ostle, UK sales and marketing manager at VBG Group. "It's mainly used in Scandinavia where they run heavier vehicles." In Sweden, the maximum permissible gw is now 64t, while Finland has allowed gross weights as high as 76t on some highways since 2013. Both are achieved by the creation of road trains with additional axles, allowing combinations such as a six-axle rigid-bodied prime mover pulling a tri-axle semi-trailer using a two-axle dolly. Having the facility to automatically couple such vehicles can save a great

deal of time, as well as potentially improving safety.

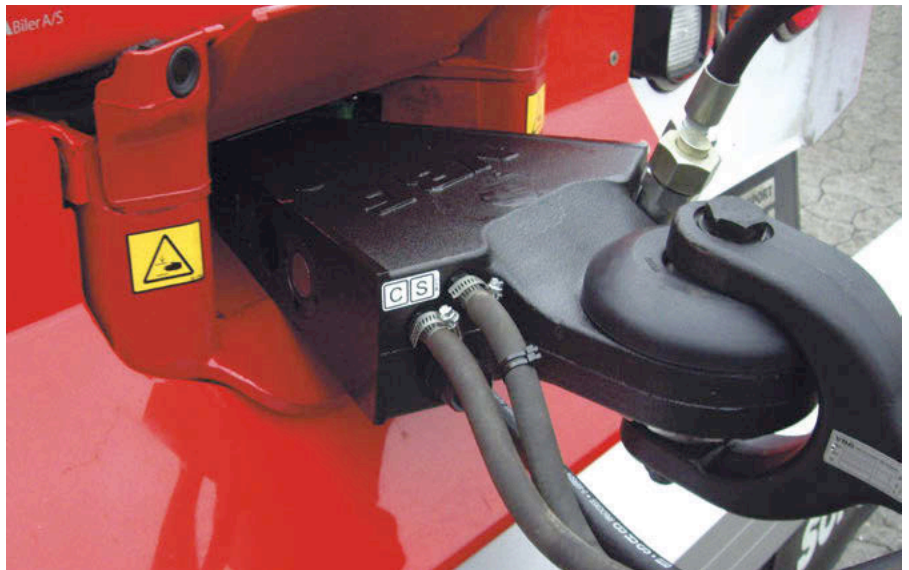
Maintenance of the MFC is done at the same service intervals as a standard coupling. Regular lubrication is, of course, a must, as well as inspection to ensure the plug-in electrical connection hasn't become corroded or bent. The MFC also comes with a basic telematics system, connected to the truck via the existing CAN-Bus.

As yet, however, VBG has not sold a single MFC within the UK, the main reason being that drawbar outfits in this country are generally of the centre-axle or 'close-coupled' variety. There is a version for these vehicles in testing, but when asked when it might be released, Ostle's reply is discouraging. "We actually showed it in Birmingham in 2008, and it generated a lot of interest," he tells us. "But then the recession came along and put the UK market on hold."

ANOTHER PRODUCT

Meanwhile, there is another auto-coupling which is designed for tractor/trailer combinations, and so may well see the light of a British day at some point. Jost's Komfort-Kupplungs-System (KKS, pictured p12) not only removes the need for suzies, it winds the legs up as well, potentially spelling the end of the rather dubious practice of split-coupling that is necessary with fridge trailers now.

Like MFC, KKS employs a wedge to connect the air and electrical services, this time sitting behind the trailer kingpin. The other half of the connection is mounted below the fifth wheel itself, marrying up as it slides beneath the trailer. The wedge is on a rotating bearing, so it doesn't matter what angle the tractor approaches from. The jaws on the fifth wheel fire in the usual way, the difference being that, for uncoupling, they are opened pneumatically, rather than the driver needing to get out and pull the handle. The landing legs are wound up and down using a small



motor which draws its power from the main electrical circuit, and the whole lot is controlled via a remote control in the cab. If the sensors detect anything wrong along the way, a red light and a loud buzzer alert the driver so he/she can stop and investigate.

Maintenance of KKS is simple, with just standard lubrication of the jaws using EP2 grease needed at service time. Information about the wedge and control system is available online (www.is.gd/kagido) should operators encounter problems, and dealerships should be able to cope with the truck-mounted half of the system without issues.

Converting an entire fleet to KKS would be a major project, but since both tractors and trailers fitted with the system can still be used with standard equipment, the changeover can be a gradual process. KKS can also be manually overridden if the driver encounters a minor problem down the road; legs which won't self-wind on a stand trailer, for example, can still be raised manually if needed. There's no dog clip, but instead an indicator marker showing whether the coupling is locked closed, and drivers can still see the jaws from behind to perform a visual check if they so wish.

Great stuff, but again we have no date for when this will actually be available. "KKS was originally developed in 2009, and since then it has been tested, reviewed, updated, and tested again. So hopefully it'll be available over the next 12 months," says Paul Clayton, Jost UK

technical sales and support manager. "Or so I keep being told..." The difficulty is having enough interest to warrant production. "I know of a couple of major fleets who are waiting for this, not least on health and safety grounds. There's a massive benefit there, especially from an insurance point of view," he says.

CONSENSUS REACHED

In the interest of balance, several other coupling manufacturers were approached to see whether they thought automated couplings were actually just a bad idea. For the record, none of them did - in fact both SAF Holland and Fontaine Fifth Wheels have toyed with prototypes themselves, the latter around the same time the VBG and Jost innovations first appeared. "We've actually still got our prototype in the factory, so we could pick up the baton if we got the interest," says Steve Marshall, UK sales manager at Fontaine.

The bottom line is that, as with all things, automated couplings will only be produced when there is a viable market for them, which there isn't at the moment. "The biggest thing in the industry has been dropped trailers and failure to attach safety dog clips, so we've concentrated on our full-sensor wheels instead," Marshall tells us. "We've brought out our new Green Eye LED indicator as well, and a lot of fleets have taken an interest. Overall, there's simply more demand for innovations on the safety side, so that's what we're making our priority." **TE**