Westcotec launches new mobile phone detection warning system

Launched at the European Policing TISPOL Conference in Manchester, the system has been designed and developed with the assistance of Dr Helen Wells, a criminologist with a specific interest in road traffic offences, driver behaviour and roads policing who is based at Keele University.

Early interest in the system has been considerable. The first install is due later this month in Norfolk, with several other UK police forces expressing an interest or requesting a demonstration. Enquiries have been received from Belgium, Finland, Lithuania, New Zealand and the United States.

The system comprises of a sensor which is capable of detecting vehicles where there are active 2G, 3G and 4G phone signals, with an LED warning sign located a short distance along the road. As long as the activation meets certain pre-determined parameters, the sensor will pick up that a driver is using a phone for calling, text or data purposes and will activate the warning sign. This shows an illuminated mobile phone icon within a bright red circle and diagonal red line.

This device is purely about education; to warn drivers and identify when the driver was on the phone. It is the first such system to have a direct interaction with a mobile phone offender.

We are not currently connecting the system with enforcement, but we plan to work towards this as a future goal.

This system is without doubt ahead of the game. The strength of vehicle-activated LED signs is that they identify the offender and only trigger when they're necessary.

The technology can detect if a driver is using Bluetooth, and will therefore not trigger the warning sign. However, any system finds it hard to differentiate between users in the car and we accept that some activations might be triggered by non-driving occupants. The vast majority of activations will relate to drivers, and we don’t see a problem when passengers activate the sign. In fact, it’s all part of the education message that using a phone when driving is not only illegal but very dangerous.

Our advice, along with all road safety organisations, is to do nothing other than drive when at the wheel. Minimise distractions and build in breaks to check voicemail, texts and emails.

If you require any further information please get in touch with our Sales Team - sales@westcotec.co.uk

Westcotec

Get your skills accredited

IHE Professional Certificates accredit the skills highways practitioners are expected to know and deliver in the workplace. IHE membership is not required, and you don’t need any specific academic qualifications or to take a training course.

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Slurry Surfacing

What is Slurry Surfacing?

Slurry surfacings incorporating micro-surfacings are cold-applied, thin bituminous surface courses using bitumen emulsion binders and fine graded aggregates with fillers and other additives. There are two broad categories; thin slurry surfacings used for treating footways and thicker polymer modified surfacings called micro-surfacing or micro-asphalt for carriageways.

What are the benefits?

- These treatments are very cost effective compared to conventional resurfacing.
- Restores surface texture and improves skid resistance.
- Rapid curing characteristics – some micro-surfacings can receive traffic twenty minutes after installation.
- High daily outputs mean minimal traffic disruption and congestion.
- They seal the surface preventing ingress of water into the pavement structure thereby helping to minimise pothole formation.
- Suitable for overlay on a wide range of existing surfaces.
- Micro-surfacing can reshape and re-profile existing surfaces by filling shallow defects such as potholes, cracks and ruts.
- Able to provide a smooth or textured finish.
- Available in a range of colours providing an aesthetically pleasing finish.

Where can they be used?

These materials can be used to restore the surface condition on roads, footways, cycleways, car parks, playgrounds, central reservations, traffic islands and amenity areas. Slurry surfacing is ideal for any type of surfacing receiving mainly pedestrian traffic e.g. footways and cycleways.

Micro-surfacings are ideal for use on urban roads and roads carrying up to 250 commercial vehicles per lane per day. Some products have a HAPAS certificate which enables them to be used on more heavily trafficked roads.

When to use Slurry and Micro-surfacing

- Before the footway or carriageway surface deteriorates to the stage where expensive major patching and/or reconstruction is required.
- Before surface skidding levels fall below the investigatory level for the class of road in question.
- When the road surface profile needs minor restoration.

Some important considerations

- Slurry surfacings and Micro-surfacings can be specified in accordance with the Specification for Highway Works Clause 918.
- These materials are recognised as Products regulated by the Construction Products Regulations (CPR) and European Standard BSEN 12273. Contractors must now provide a CE mark and a Declaration of Performance for each type of Slurry Surfacing and Micro-surfacing product placed on the market.
- Further guidance is available within the Design Manual for Roads and Bridges (DMRB) HD37.
- These products are designed by the contractor to meet the requirements of the road surface on which they are laid.
- The work should be carried out by an experienced contractor who can demonstrate a good track record of high quality work.
- All contractors who are members of RSTA have achieved accreditation to the National Highway Sector Scheme 13 for the Supply and Application of Surface Treatments to Road Surfaces.

Environmental considerations

- RSTA in association with the University of Nottingham have published a suite of carbon calculators for measuring the carbon footprint on schemes using surface treatments including Slurry surfacings and Micro-surfacings.
- These carbon tools are called ProTECT (Pavement Road Treatment Embodied Carbon Tool) and have been endorsed by ADEPT.
- The rapid speed of the process means that disruption to road uses, local businesses and emergency services is minimised.
- They are applied cold at ambient temperature so they have zero emissions and zero risk of fume installation and burns to operatives during installation.

Life expectancy

- Careful attention to material design and execution has provided in service performance of typically 10-15 years life on trafficked sites.
- Further information on service life is available in the RSTA ADEPT Service Life of Surface Treatments document reissued in 2017 available at www.rsta-uk.org/publications.htm

RSTA ADEPT Code of Practice for Slurry Surfacings incorporating Micro Surfacings

- Second issue published in 2014 and peer reviewed and endorsed by the Association of Directors for Environment Economy Planning and Transportation (ADEPT).
- It is freely available on the RSTA website www.rsta-uk.org/publications.htm
- This Code of Practice has been written by the Road Surface Treatments Association and ADEPT to assist procurers and installers to obtain a high quality durable surface treatment. It represents best practice for the selection and application of Slurry and Micro Surfacings to maximise their performance and durability.
- To obtain the best results it is necessary to give careful consideration to a wide range of details and to plan and design the work carefully and to use experienced contractors with a good track record. All of these products comply with Clause 918 of the

Continued pg 3
Product assessment

Pavement Testing Services Ltd is an SME based in Preston with its focus on providing the highways markets with information to enable better decision making, adding value to infrastructure owners’ asset management activities. This service is provided by deploying all four of the organisation's key functions. The four functions are firstly, provision of site surveys generating condition assessments for key performance indicators such as skidding. Secondly, a site investigation service delivered through in-situ measurements and sample core assessment. Thirdly, laboratory testing of material properties, such as asphalt stiffness modulus, provides substantiation of an organisation's product declaration. Finally certification and accreditation services that provide legal documents required for the market to function. PTS Ltd is now an accredited Technical Assessment Body (TAB) in the sector for Road Construction Products. We can now undertake European Technical Assessments (ETAs) and produce European Assessment Documents (EADs), within this area. PTS disseminates changes in industry requirements and prevailing best practice by providing academia backed training courses.

The latest development from PTS is its innovative approach to Product Assessment. At the heart of this new assessment methodology is service life expectation, verification of service life claims prior to market entry and validation on a routine basis that client expectation has been realised. This level of assessment is becoming increasingly important as clients begin to detail service life aspects in specifications. The driver for this specification change is its link to asset management and the need for high quality information.

For a product assessment system to work there needs to be a robust methodology. The sector’s largest road-owner is Highways England and they specify exactly what constitutes a Certificated Product Assessment. To be able to do so an organisation needs to have an internal accredited governance process to protect the integrity of their system. Additionally, a Technical Supervisory Panel, made up of a wide range of interested party expert representatives, provides external system governance by consenting to the various guidelines and criteria used in product assessments. There is a multitude of product and service families requiring assessment. Each family will require a specialist group to develop the necessary guidelines and criteria for assessments. Ensuring competency and authority to generate the certificates, organisations need to evidence this through accreditation to TAB status.

PTS has now completed all the necessary stages specified and is able to issue certificated product assessments to HAPAS equivalence. It is doing so by taking measures to ensure that any assessment is based on robust criteria. This means ensuring the assessment covers all the specified aspects of the delivered material, its properties when installed and in-service condition requirements. The assessment deals with verification and subsequent audits ensure appropriate validation is evidenced.

The first technology seeking certification will be the Billian UK developed Roadmender range of high reclaimed asphalt content volumetrically mixed hot asphalt. The mix-on-site small batching plant enables sector scheme accredited surfacing companies such as Kier Highways, to have the ability to permanently repair potholes with fresh high performance materials. Assessment and auditing have been completed for the Hot Rolled Asphalt, Stone Mastic Asphalt, Asphalt Concrete and Mastic Asphalt materials containing up to 100% of the aggregate replaced with reclaimed asphalt.

Tony Sewell, Pavement Testing Services Ltd
A step change in road worker safety is needed

I am passionate about changing the way we work in this industry and will continue to invest in research and development to find better, more efficient and safer ways of working.

For too long now, we have carried out various highway maintenance activities in the same way as we did when I first came into the business more than 30 years ago.

In terms of general UK road safety, it is acknowledged, that our busy road network has consistently ranked among the world’s lowest levels of killed and seriously injured (KSI). Perhaps that’s down to our ingenuity, with our world class design engineers and road builders, Traffic Sign Regulations and General Directions (TSRGD), plus the introduction of ‘Cats Eyes’ by Percy Shaw in the 1930’s or the Shell and Colas innovation of high friction surfacing in the 1960’s to not mention today’s high-performance road markings. So, maybe, as a country, we should congratulate ourselves on a relatively safe road network.

However, my concern is that, in recent years, overall injuries to our estimated 6,000 road maintenance workers has risen. In today’s traffic conditions, the live carriageway of any highway is a very dangerous place to work. A large proportion of our specialist road marking delivery is on motorways and major A roads and according to Highways England, over the past ten years, fourteen service provider workers and two Highways England traffic officers were killed whilst carrying out their duties. Research has highlighted that roadside workers have the 16th most hazardous occupation in the UK so the statistics are no great surprise.

Our business is primarily, about road safety and we continuously innovate high performance and durable markings to provide better and safer journeys for the road users. However, it is safety and well-being of the workforce with equal consideration for the safety of everyone impacted by our activity, that dominates our thinking. So, to that end, we must all embed safety into our businesses as a core value. There is nothing more important than ensuring everyone goes home safely after each day or night shift.

We certainly support Highways England aim which is ‘no one should be harmed when travelling or working on the strategic road network’ and want to help ‘make the network safer contributing to a target of 40% reduction in deaths and serious injuries by the end of 2020’.

Training, operative awareness, collaboration, adopting best practice, influencing behaviours and innovation all have a vital part to play in meeting this objective.

We also recognised some time ago that the most qualified group of people to provide ideas for continuous safety improvements are our own workforce, so we pioneered a proactive system of engagement.

Many of the resulting initiatives with PPE, trucks and processes have all helped raise the bar for the road marking sector. However, I concluded that a step change in our thinking and approach is needed if we are to achieve the industry aim of zero fatalities.

One thing that could help us is more ‘automation of processes’ to remove operatives off the carriageway and place them out of harm’s way. We have risks associated with people, plant interface, handling hot materials and of course we are always vulnerable to unauthorised incursions into working areas.

A move in this direction has been our new method of road stud installation. The bespoke design of the WJ Guardian system allows the complete road stud installation process to take place, whilst protecting operatives within an integrated safety cell of an 18-tonne truck.

My fervent wish is that this new thinking will not stop at road stud installation but act as a catalyst to explore automation of other highway maintenance processes and afford more workers a greater level of protection.

The development also provides designers with the potential to eliminate several road closures and reduce disruption within the communities we serve whilst also improving the safety of workers and road users alike - which is all good news!

Hopefully, it could also be better news in respect of our skills shortage. We

The UK utilise approximately 12 million road studs on our national and local road network, all requiring maintenance or replacement at some point. Traditional methods of installation by hand or milling machine require operatives to work in the centre of the road and therefore at risk of injury or worse.

That risk varies from site to site but always with a need for safety zones, either stop/stop type traffic management or road closures, to comply with the regulatory requirements. The WJ Guardian method does not negate this need for safety zones but does significantly reduce the actual safe work zone required. The innovative method ensures that the operative does not need to stand and operate equipment from the opposite carriageway to the vehicle but instead they are protected within the vehicles unique safety cell as well as within a regulated safety zone.

“We must all embed safety into our businesses as a core value. There is nothing more important than ensuring everyone goes home safely after each day or night shift”
Tapering driver behaviour

There is a joke doing the rounds which talks about people who feel trapped in demoralising jobs. To which the witty reply is “it could be worse, you could be the person in the factory who fits the indicator stalks on Sales Rep’s cars knowing they will never be used”. It isn’t just Sales Reps of course, or even drivers of certain brands or types, many drivers become a completely different animal when put behind the wheel. Modern vehicles deliver a sense of invulnerability through substantial build quality and NCAP rated safety features, whilst a plethora of tech features like adaptive cruise control and satnav take away a lot of the driver’s interaction with their surroundings. All of this can result in drivers feeling that they are in a comfortable, impenetrable ‘bubble’ which can cause a reduction in empathy for other road users.

There is also a lot more ‘pressure to deliver’ on drivers in this modern fast paced world. Whether it is the rep chasing his next sales meeting, the haulier who is trying to be on time for a slot at a warehouse, the delivery driver trying to hit often unrealistic drop time targets; or even something as simple as making the school run on time.

If you add into this pressure cooker environment, a set of roadworks which drop a dual carriageway or motorway to a single lane with a much more restrictive speed limit in force, personal stress levels will quickly start to rise in even the most serene. And then, if that wasn’t enough to contend with, you have to cope with the driver who has waited until the very last moment to move into the correct lane. Go on. Admit it. You have pulled up really tight to the car in front of you to stop the errant driver getting in front of you. Cue more stress and bigger delays.

There have been calls for the system of ‘zip merging’ to be more widely used as there are studies showing it can reduce congestion and it is better to be in two lanes of slow moving traffic than one snarled up lane, but even though we Brits are the world leaders at queuing, woe betide anybody who is seen to get a seemingly unfair advantage.

So we have what we have but that doesn’t solve the resentment and sometimes bare aggression of drivers in both lanes. After all, there will have been wicket signs and other advance warnings of the impending lane closure placed well before the works, but they don’t seem to register with some drivers, who then engage in bad language and fist shaking at best; or at worst, hitting you or the cone line.

At crawling speed a vehicle hitting the cone line will probably cause slight vehicle damage and a bit of a red face. But it can cause nearly as much disruption to traffic flows as a taper hit at speed when you consider the time it takes to organise a team and an Response/Impact Protection Vehicle to safeguard them, get to the site (potentially entering and adding to the congested area) and do the job.

Hitting a taper at speed can and often does, prove catastrophic for roadworkers. According to RoWSAF figures in 2016 there was one fatality and 39 injuries categorised as serious (requiring an absence from work of over 7 days).

The answer is not more signage which incurs expense and actually increases the risk of death and injury to workers putting them out and recovering them, it is modifying driver behaviour.

One proven modifying strategy is rootled all the way back to our days living in caves. Without getting all David Attenborough on you, the human race is evolved from and in some parts of the planet, remains, a prey species for the biggest predators in the animal kingdom. This means our brains are hardwired to detect and react to movement as a basic survival instinct. Unipart Dorman harnessed this trait when it introduced its SynchroGUIDE sequential lamp system, which uses a bright pulse of light that appears to travel along the taper line. This significantly increases driver awareness of an impending closure and allows them to make an earlier decision to move lane.

Sequential lamps have been subject to 2 significant studies into their effectiveness, one in the UK done by the Highways Agency on the M42 in 2005 and one carried out by the University of Missouri in 2011. Both studies used vehicle position data and modelling to demonstrate that sequential lights delivered a significant reduction in vehicles making late lane changes.

Unipart Dorman has always been at the forefront of improving roadworker safety from its introduction of the first electric road danger lamps into the UK back in the mid-1960s, through the introduction of high performance LED light sources as used in the ConeLITE, which has sold over 2 million units in the UK alone, to introduction of the SynchroGUIDE and ConeLITE Synchro sequential lamps; by not only reducing their exposure to high speed traffic during the setting out and recovery process but from the dangers from taper strike. Further evidence of the strong commitment to improving safety has been the collaboration with Highway Resource Solutions on their Intellilcone products which have also been subject to studies showing their effectiveness at warning workers of not only taper incursions but also the recent phenomenon of drivers taking short cuts through roadworks.

There are always going to be the exceptions to rule and you will still get the driver who thinks that haring down the lane about to be closed will save that all important 45 seconds. Sequential Lamps offered by Unipart Dorman go a long way to reducing taper strikes and making sure everybody gets home safely every night. Whether road worker or road user, all lives matter equally.

Unipart Dorman

SyrochroGUIDE sequential lamp system
Industry leaders in Asset Management

Connect Plus (CP) and Connect Plus Services (CPS) have successfully achieved certification to the new international standard for asset management (ISO 55001:2014).

Asset management is a core part of the 30 year M25 Design Build Finance and Operate Highways Contract. Together, CP and CPS are directly responsible for end-to-end asset management. This includes making decisions on how best to invest £1.7 billion in more than 140,000 assets that comprise the M25 road network over the 30-year contract.

The asset management system developed by CP and CPS is designed to cope with the scale and complexity of the M25 environment. It underpins asset inspection and, through bespoke Decision Support Tools, generates plans to optimise the delivery of around £50 million of asset renewal work every year, through a BS 11001 certified framework.

The international framework standard is still relatively new, and has to date been mainly adopted by airports and water companies in the UK. Its application to the M25 asset management system has helped enhance the system even further. The certification process provided the assurance of an external quality assessment of the system for shareholders and client, Highways England.

The journey to align with the standard was a fully collaborative exercise between CP and CPS, ensuring integration of all users across all elements of the system, and eradicating duplication.

The audit process focused on technical capability, and wider elements that support an effective asset management system, such as communication, leadership, supply chain management and risk management. More than 30 people from the M25 community participated in the audits, demonstrating the depth and scale of the certification process.

External auditor Lloyds Register has confirmed CP and CPS’ integrated asset management system meets the requirements of ISO 55001, marking them as industry leaders in the UK.

CPS managing director, Brian Johns: “We’ve made a significant investment in this system because we could see the benefits in optimising our lifecycle interventions over the long duration of our contract. We are in a unique position to offer our expertise to assist other asset managers in the development and operation of an asset management system that will produce similar long-term benefits to their business”.

Benefits to achieving certification:

- Test and improve the effectiveness of the existing system
- Demonstrate asset management capability
- Improve asset management awareness

Key numbers:

- 440km network
- 140,000 assets
- £1.7 billion spend
- 30-year contract
- 200+ people in the system

Key lessons learned:

- Joined-up certification approach improved integration of teams and processes across both businesses
- Scope of standard wider than pure technical aspects. M25 approach benefited from focus on leadership, communication and awareness
- Demonstrable improvements made to the asset management system against each 55001 clause
- Improved asset management awareness in both businesses

Connect Plus Services

Swindon Borough Council - Highway Efficiency; doing more for less

Two years on since their purchase, Swindon Borough Council reflect on benefits they are achieving using the Multihog

In 2015, Swindon Borough Council scrutinized how best to deliver cost savings to combat service delivery cuts and identified their frontline service delivery as an area of improvement.

After careful consideration, the authority opted to take advantage of a Multihog trial hire to determine what benefits could be reached through implementing innovation to tackle reactive and planned highway repairs, in comparison to their traditional ways of working. Off the back of the trial hire the Council have purchased their own Multihog machine with Planer, Brush Bucket Lifter and Trailer attachments which they have now been using for over 2 years.

Old versus New – Real life results

Productivity

Previously a cause for concern, the authority currently achieves 150-200sqm of repairs per day using the Multihog, with it used solely on highway repairs 12 months of the year to plane and sweep road defects. They are now self-delivering more highway schemes as opposed to contracting out work, with the machine tackling repairs from ½ sqm up to 140sqm in size.

Cost Saving

The Council anticipate they are now carrying out 200-300% more work with the same budget using the Multihog. Savings are as a result of increased productivity and the machine’s ability to plane to an accurate depth required i.e. 50mm off the surface course as opposed to breaking out 100mm inaccurately

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with a jackhammer resulting in base and binder courses needing replacing which is unnecessary and costly work.

**Health and Safety**

Risk of operatives having health issues as a result of overexposure to vibrations, noise and dust are eliminated entirely.

**Increasing Workforce Skillset**

Traditionally the workforce had responsibilities limited to only breaking out and reinstating defects manually. Following the acquisition of the Multhog 6 Council operatives are now trained to drive and operate the multi-purpose utility vehicle achieving accredited LANTRA certification, whilst ensuring the Council always has availability from an operator perspective.

**Income Generation Opportunities**

Given the bulky nature of jackhammer broken out road material, there is usually some form of material disposal cost, which in Swindon was £50 per tonne. Given the fine degree of Multhog planings, now the Council never have to pay disposal costs on materials, it is now recycled into future schemes i.e. base works. Along a carriageway, offered to local farmers or sold on at £10 per tonne (the Council could sell 20 tonnes of Multhog road planings for £200 with no disposal costs, whereas the material broken out by jackhammers could not be sold and would cost the Council £1000 to dispose off).

**Future Opportunities**

Swindon are currently considering investing in Multhog winter attachments to increase income generation potential through maintaining schools and car parks around the Borough which aren’t currently a responsibility.

**Mirroring Success**

Swindon Borough Council’s handlay patching highway gang set up is as follows:

- 1 x Multhog MH, 400mm Planer, Brush Bucket Lifter, Trailer & Operative
- 2 x Traffic Management Operatives
- 1 x 18 tonne wagon (carries hot material) & Driver
- 1 x 18 tonne side tip wagon (Multhog BBL tips defect material onto) & Driver
- 2 laying operatives & 1 general labourer

Swindon Borough Council is a unitary authority based in South West England bordering counties Wiltshire, Oxfordshire and Gloucestershire. Highway services are responsible for maintaining 824km carriageway, which consist of both rural and urban environments.

### Visit the IHE at upcoming events

The IHE will be on hand at upcoming events to offer support and guidance on membership, professional registration and progressing your career.

You can find us at Road Expo Scotland, 1st-2nd Nov; Roadmarking Live 2017, 15th Nov; and the National Engineering and Construction Recruitment Exhibition, 24th-25th Nov.

www.theihe.org/events