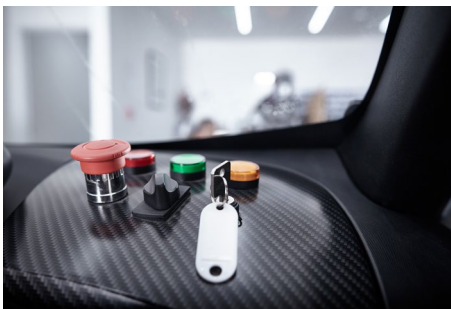




In the driver's seat

Performing trials for automated vehicles needs to be done as safely as possible, and standards like PAS 1881 are helping organizations like StreetDrone to pave the way...



Oxford-based StreetDrone may be a relatively small player in the burgeoning world of connected and automated vehicles (CAVs), but an excellent pedigree and an unrivalled commitment to safety make them a name to watch. Here, Ross James, the company's Lead Safety Engineer, explains how following best practice from BSI has given the company a significant boost.



Q. How did the business come about, Ross?

A. StreetDrone was founded in 2017 by Mark Preston, who brought a depth of motor racing experience from his engineering leadership in various Formula 1 teams, and Mike Potts, a digital entrepreneur who headed Expedia's expansion into Europe. Their engineering and digital interests intersected in a plan to develop self-driving vehicle technology which came to life with the foundation of StreetDrone. Today, the company is at the forefront of developing vehicle technologies that enable the automated delivery of goods.



Q. What has the company done to date?

A. We started by converting vehicles so that you could control them with a computer. We began with a small Renault Twizy, a two-seater city car, which our guys converted to a 'drive by wire' system by putting computers and other elements in to be able to control it. From that they moved up to different products, like the Nissan e-NV200, which is a larger, minivan-type vehicle. Since then, we've broadened our scope so that we now also do self-driving software, data platforms and other things.

Q. What's your USP?

A. We make the best of people and automation to move goods faster, easier and better for businesses. We do this with a range of hardware solutions and through software to control the management of vehicles and goods across the delivery chain. But core to our business is the safe operation of automated vehicles operating at low speeds.

Q. How would you describe the state of the CAV industry at the moment?

A. There's been a lot of technology development so far, but there's not been a use case focus to it. There was a lot of talk about robo-taxis and that sort of thing, but it's a very difficult challenge doing 'go anywhere, do anything' autonomy that you need with a robo-taxi. Our focus is on low-speed, urban autonomy. By sticking to low-speed areas, probably sub-20 miles an hour, we're shrinking down the challenge.

Q. How did the paths of StreetDrone and BSI first cross?

A. It was when we first started looking to do our own trials and demonstrations at the end of 2019, because when doing these you need to demonstrate that what you're doing is safe. When we were looking to do that we came across the BSI CAV standards and PAS 1881, which is concerned with

safety assurance for CAV trials. It's a great document for companies that are looking to do trials and demonstrations and outlines all the things you need to consider. It explained the documentation you need to put together to try and justify that your trial is safe.

Q. Has the relationship developed since then?

A. Yes, we've had some discussions with BSI and we've spoken to Oxfordshire County Council, and they've helped us get involved in some of the CAV standards, such as PAS 1882, which is a data standard and PAS 1884 which is around safety drivers. We're now on the steering groups for those standards. BSI try and bring together a whole host of different stakeholders – and there are lots of them – to generate these standards so that they have as wide a range of viewpoints as possible.

Q. Were you among the first to use PAS 1881?

A. We were – we were working with the draft copy at the start because we could see it looked like what we were trying to do and decided to work with that until it was published.

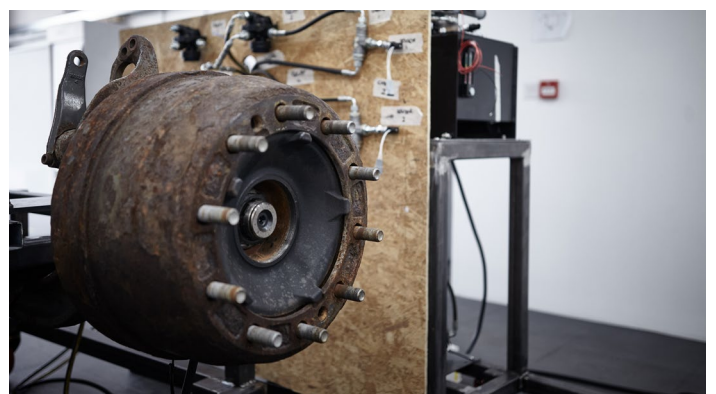
Q. When you saw PAS 1881, what became clear that it could do for you?

A. We could see it could put some structure behind what we

were already doing. Lots of the elements in the PAS we already thought about and we already had documentation for, but then there were other elements that we hadn't necessarily thought about. And so it was quite a holistic overview of all the different elements you need to consider in order to demonstrate that your trial is safe. And it also gave us some confidence that it wasn't just our viewpoint on things. We're a relatively small company and we've got some good experience, especially in engineering and safety engineering, but using this PAS gives us confidence that a wider range of stakeholders have said that this is what people should be doing.

Q. How would you describe to a newcomer to standards exactly what the PAS does for you?

A. It really just steps you through all of the elements that need to be included in order for you to present a case that your trial is safe. It covers all of the considerations you should make, and then you can work through that and at the end you can say, 'Yes, we can tick that, we've done that, we've answered those questions, we've got the document that fulfils that clause' or whatever.





Q. How has it proven its value?

A. We consistently use it to generate safety cases for new trials and demonstrations. One of the things it helps with is when you're talking to people who aren't familiar with CAV trials or with demonstrations: if we want to do a demonstration in a new area we can use it to enable whoever we are working with to have confidence in what we're doing. We can say, 'Look, we're experienced in this, we've done demonstrations before, we use these BSI PAS standards' – and lots of people know BSI, so it gives them confidence in what we're doing.

Q. Do you think that standards are going to speed up the arrival of automated vehicles on our roads?

A. Absolutely. One way is by making sure that our development is aligned with what government and legislators are going to want in the future. I think the standards can definitely help make sure that everybody's moving along the same path and in the same direction, rather than people going off and doing different things. What you don't want is to spend three years developing something that has gone off in a completely different direction to a forthcoming standard.

Q. Finally, then, Ross: the \$64,000 question. What do you think will be the year of the automated vehicle in terms of its availability to the general public?

A. If you're talking about being able to go out and buy an autonomous car with no steering wheel from a dealership and it being able to take you anywhere, I think that's a long way away – maybe 20-plus years. But if you're talking about seeing a vehicle on the road which is driving itself to deliver your parcels, or to take something from A to B, then I think we're probably five years away.

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