



HOW KELVIN HUGHES SECURITY RADAR OFFERS THE MOST COST-EFFECTIVE SOLUTION TO PROTECTING CNI SITES

An Interview with Jonathan Field, Director of Security Systems, Kelvin Hughes



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Director of Security Systems,
Kelvin Hughes

Q. Jonathan, can you start by telling us something about Kelvin Hughes' Security Division.

A. It's a relatively new division, created 18 months ago to focus our technology on the detection of targets over land rather than at sea which has been our traditional market historically.

There are a lot of Critical National Infrastructure (CNI) sites around the world, including airports, that don't have the resources or the capability to use sophisticated military radar systems and want a more cost-effective solution. Our SxV, X-band solid state radar, based on our SharpEye™ technology, can see very small targets both in good weather and bad weather. Currently, the majority of radars in this sector work at a higher frequency than X-band and therefore don't see very well in poor weather conditions.

Not only can our radar pick up very small things, even down to individual birds, it's also small and lightweight, weighing only 18 kg, which makes it very easy to mount. SharpEye SxV doesn't need any sophisticated infrastructure around it and it's easy to use. It can be supplied with some very user friendly software, so someone who has never used radar before can operate our system quite easily.

Q. There has been a lot in the press recently about drones. How relevant is this to Kelvin Hughes?

A. The problem with drones is that they are cheap to buy and easy to use. So terrorist groups and others with malicious intent can easily use them for surveillance of a site they might want to attack simply by adding a camera underneath. But even more seriously, drones can potentially be modified to carry a payload, whether explosive or something else.

However, despite the fact that drones are small, our security radar can detect them, making it highly cost-effective to place a number of radars around the perimeter of a sensitive site. Early detection gives you the time you need to identify a threat from a drone, track the drone and potentially see where it's come from, and then do something about it.

Q. What do you think the effect will be of the proposed legislation concerning drones?

A. It's one thing to legislate but actually prosecuting people is another matter. Drones are very easy to buy and to set up – you can have one flying in a matter of minutes. You can then land it, pack it in your car, and drive away. So one of the big advantages of our radar, particularly when combined with a camera system, is that you can acquire physical evidence which can be used to prosecute afterwards.

Q. Are there any other factors that make Kelvin Hughes security radar stand out from the competition?

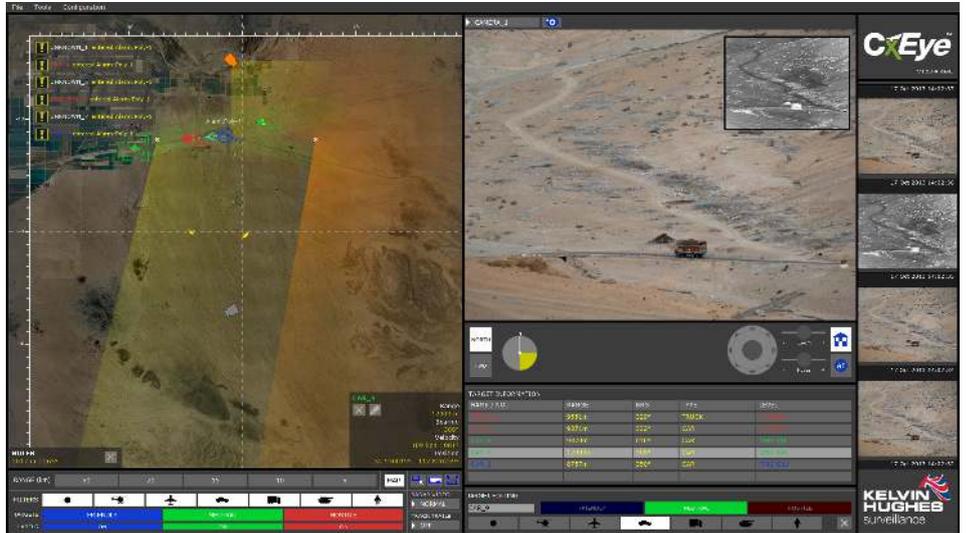
A. Any CNI site that faces a potential threat from drones also faces a potential threat of intrusion from the ground. Kelvin Hughes' security radar systems are not only capable of seeing low-level air targets but also approaching people and vehicles. They also emit very low power which, combined with the frequency they transmit at, means the radar doesn't interfere with any other larger systems such as an airport's Air Traffic Control radar.

I think it's all a reflection of the fact that radar is in our pedigree as a company. Kelvin Hughes invented the first commercial marine radar in 1947 and we've been developing new technologies ever since. We also understand the operational requirements of radar users. So, for example, we can integrate other sensors, such as cameras, within our radar installations and all of the hardware can be mounted on a single pole – which we call our Single Mast Solution (SMS). The SMS has a very advanced pan and tilt mechanism incorporated within it. So there's no complicated infrastructure to worry about.

In addition to the hardware, our software will interpret the information from the various feeds in a highly intuitive way. So not only will the system detect a drone or another target, it will also move a camera onto it and track it, enabling the operator to identify the nature of the threat and put the right counter-measures in place.

Q. Can your radar systems be camouflaged?

A. Well, we can provide them in a number of different colours depending on what people want but the fact is that when you put them up on a mast they're actually quite difficult to see. The radome itself is less than a metre across and it doesn't need to be very high up in the air. But what's more important is that our radar emit very low power, which means that even using electronic counter-measures (ESM), it's very difficult to detect that our systems are radiating.



Q. How many of your radar systems would you need to protect, say, an airport?

A. There are a number of factors to consider, including the size of the perimeter and how good the line of sight is around the perimeter. But one of the big advantages our radar have is that they are able to detect through 360 degrees as opposed to our competitors who tend to work with flat panel radar which are limited to 180 degrees or less of coverage. So our systems are highly cost-effective because you need far fewer to cover a given area.

Typically, our radar are able to detect a target like a drone up to a range of about 1km which means that you are effectively extending your perimeter to that extent. The problem with relying solely on a physical barrier, although it's obviously essential for critical sites, is that you don't really know that you've got a problem until it is at that barrier and that can be too late to react to it. The advantage of using radar is that you know a threat is developing before it gets to you, whether it's a drone or an intruder. If you know what's happening before a problem arrives on your doorstep, you can deploy your counter-measures or your response force in advance and at the point where your physical barrier is likely to be threatened.



Q. Which areas of the world are you currently active in?

A. Because of the nature of the global terror situation, nobody is immune from it. So we are active throughout the world. Obviously there is a great deal of sensitivity in North Africa and the Mediterranean at the moment and we're very involved there but it's not just about terrorism. Our systems are also deployed to protect areas of economic significance that might be at risk from organised criminal gangs, wherever that might be.

Q. Are there any final comments you'd like to make?

A. I think it's important to stress that we're able to deliver our kit and have it installed very quickly. That capability, combined with its ease of use, means that people with no prior knowledge of how to set up a radar system, or use it, can be operating a highly capable detection system very rapidly.