Military satellites will help to track rogue ‘ghost ships’

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Vessels that turn into “ghost ships” by switching off their signals so they cannot be tracked as they commit “nefarious” acts in the high seas will be located using radar from military satellites under government plans.

Scientists at the Defence, Science and Technology Laboratory, which is part of the Ministry of Defence, are developing satellites that will be able to see the Earth’s surface in all weathers and at night and spy on adversaries.

The satellites will use radar to create images of the seas and detect the wake of ships to identify the location of those that may be acting illegally.

The network of small spacecraft will also be useful when states such as Russia attempt to spoof GPS signals by sending out false location data on ships.

Dr Mike O’Callaghan, who oversees space research at the defence laboratory, told The Times: “If a ship has turned off that signal it probably is the case they may be up to no good so generally that is something we might be interested in taking a look at.”

He said that his team was working with the UK Space Agency to interpret data from the NovaSAR civilian radar satellite, which tracks illegal shipping activity, to develop a space-based military radar demonstrator that would be ready “reasonably soon”.

Ships are required by law to transmit a location signal but this can be switched off when the crew want to remain hidden. Rogue states that want to flout sanctions by selling oil to other regimes often obscure tanker signals.

In July 2019 Royal Marines intercepted the Panama-flagged supertanker Grace 1, which was believed to be carrying sanctioned Iranian crude oil to Syria. Its automatic identification system (AIS), which lets the vessel be tracked, had been turned on and off to hide its location, cargo origin and destination, according to Lloyd’s List.

The signals are also manipulated by countries such as Russia to confuse others. During the Black Sea incident last month, when HMS Defender sailed in waters off Crimea, the British government said that the ship’s AIS had been manipulated, although it did not accuse any specific country or organisation of responsibility.

The government said that the system had made it seem as if Defender was at sea when it was actually alongside in the port city of Odessa, Ukraine. A Ministry of Defence spokesman said at the time that “AIS is the International Maritime Organisation’s commercial global safety system for all marine traffic. Any manipulation could result in a serious incident.”

On the fringes of the Space-Comm Expo conference in Farnborough, Hampshire, Ian Annett, the deputy chief executive of the Space Agency, said: “Space offers us that ability to see better and to see more.” He said that it was very difficult to spoof signals but those with the capabilities can “make a ship think it is elsewhere. That’s why having that duality, diversity and redundancy is really important so you can compare your signals, and say, ‘Hang on, that signal is not right.’ ”

The intention to build the cluster of military radar satellites was first announced in September 2019, when Airbus was awarded a design study contract from the defence laboratory. Next year was cited then as the potential launch date.