

**OPINION UNDER SECTION 74A**

Patent	GB2424981
Proprietor(s)	Timothy Laurie Somner and Brian Langley
Exclusive Licensee	
Requester	Timothy Laurie Somner
Observer(s)	Network Rail Infrastructure Limited
Date Opinion issued	19 January 2018

**The request**

1. The comptroller has been requested to issue an opinion as to whether GB2424981 B (the patent) is infringed by Network Rail's Obstacle Detection System (ODS) as described in the request and accompanying appendices 1 to 12.

**Observations**

2. Observations were received from Network Rail Infrastructure Limited c/o Womble Bond Dickinson (UK) Limited.

**Observation in reply**

3. Observation in reply were submitted by the requester.

**Further correspondence**

4. The observer filed a further response to the Observations in reply and the requester replied to this further response. The Opinions procedure allows for only one round of Observations and Observations in reply. I shall therefore disregard this further correspondence.

**The patent**

5. The patent was filed on 24 November 2004. It was granted on 27 October 2010 and is still in force. It relates to a system for detecting the presence of an intruding body

in an area of potential danger such as an unmanned railway level crossing. It does this using a number of sensors which detect an intruding body and trigger an alarm when detection occurs. The patent has four claims, the first of which is independent. It reads as follows, broken down into integer parts for ease of analysis:

- A system for detecting the presence of an intruding body in an unsafe or prohibited area comprising
- (a) a control circuit
  - (b) a battery power source
  - (c) a variety of sensors
  - (d) and an output system capable of controlling alarm, image capture and communication devices and transmitting information to remote locations
  - (e) the system being switched from a dormant state using an extremely small current to an active state requiring a significant but small current by signals originating from a variety of sensors which can operate individually or in conjunction with each other and may be same or mixed types
  - (f) while activation of the unit is indicated by one or more LEDs whose primary function is diagnostic.

## **The Network Rail Obstacle Detection System**

6. The Network Rail Obstacle Detection System (ODS) is a system for detecting an obstacle or intruding body on a railway level crossing. The requester contends that this system infringes the patent by having all the features of claim 1. This is disputed by the observer.

## **Infringement**

7. Section 60 of the Act states that:

*(1) Subject to the provisions of this section, a person infringes a patent for an invention if, but only if, while the patent is in force he does any of the following things in the United Kingdom in relation to the invention without the consent of the proprietor of the patent, that is to say-*

*(a) Where the invention is a product, he makes, disposes of, offers to dispose of, uses or imports the product or keeps it whether for disposal or otherwise;*

*(b) Where the invention is a process, he uses the process or he offers it for use in the United Kingdom when he knows, or it is obvious to a reasonable person in the circumstances, that its use there without the consent of the proprietor would be an infringement of the patent;*

*(c) Where the invention is a process, he disposes of, offers to dispose of,*

*uses or imports any product obtained directly by means of that process or keeps any such product whether for disposal or otherwise.*

*2) Subject to the following provisions of this section, a person (other than the proprietor of the patent) also infringes a patent for an invention if, while the patent is in force and without the consent of the proprietor, he supplies or offers to supply in the United Kingdom a person other than a licensee or other person entitled to work the invention with any of the means, relating to an essential element of the invention, for putting the invention into effect when he knows, or it is obvious to a reasonable person in the circumstances, that those means are suitable for putting, and are intended to put, the invention into effect in the United Kingdom*

8. The request does not indicate that indirect infringement under section 60(2) is to be considered.
9. In the Supreme Court in *Actavis UK Limited and others v Eli Lilly and Company [2017] UKSC 48* Lord Neuberger stated that the problem of infringement is best approached by addressing two issues, each of which is to be considered through the eyes of the notional addressee of the patent in suit, i.e. the person skilled in the relevant art. Those issues are:
  - (i) *does the variant infringe any of the claims as a matter of normal interpretation; and, if not,*
  - (ii) *does the variant nonetheless infringe because it varies from the invention in a way or ways which is or are immaterial?*
10. If the answer to either issue is “yes”, there is infringement; otherwise there is not.
11. Neither party has submitted a definition of the person skilled in the art but I consider that person to be a technician or engineer working in the field of safety systems which detect obstacles in hazardous areas with particular knowledge of systems employed at railway level crossings.
12. I shall start by considering whether the Network Rail ODS infringes the patent as a matter of normal interpretation. This means interpreting the claims in the light of description and drawings. Simply put, I must decide what a person skilled in the art would have understood the language of the claims to mean. I shall do this by considering each part of claim 1 in turn, taking account of the arguments on each side.

### **Does the Network Rail ODS infringe as a matter of normal interpretation?**

13. The Network Rail ODS is a system for detecting an intruding body in an unsafe area.

Part (a) of claim 1 requires it to have a control circuit. The requester states that the Network Rail ODS has an embedded PC to process, control and record data from various devices. This has not been contested by the observer and I am satisfied that a control circuit is present.

14. Part (b) is the requirement for a battery power source. The observer argues that the Network Rail ODS is powered by a mains supply but with a battery back-up supply for the entire level crossing such that in the event of a power cut, the crossing and ODS will still operate for a period of time, said to be several hours. This, they say is in contrast to the system of the patent which is designed to run solely from a battery power source.
15. It is clear from the patent that the system is designed so that it can be used with a battery power source alone. The description highlights a drawback of the prior art being the need for a mains electricity supply. The requirement of small current drain and use of wind and solar charging also indicate that mains power is not necessary. The requester argues that the ODS with battery back-up is enough to fulfil the requirement of claim 1 and that the claim does not exclude mains power when available. There is no disclosure in the patent of the use of mains power when available. Indeed the whole teaching leads the skilled reader away from using mains power. Nevertheless, I am in agreement that the presence of a battery back-up power source is enough to satisfy part (b) of the claim.
16. Part (c) requires a variety of sensors. The description and dependent claim 3 indicate that these are the sensors which detect an intruding body. It is common ground between the parties that the Network Rail ODS has at least one LIDAR scanner and a RADAR scanner. Thus part (c) is present.
17. Turning to part (d), the patented system has "*an output system capable of controlling alarm, image capture and communication devices and transmitting information to remote locations*". A question arises here of whether claim 1 actually includes the alarm, image capture and communication devices. Figure 1 describes the whole system and includes an alarm, photographic camera and telephone link or radio transmitter. Dependent claim 3 states that the output system comprises a photographic camera, a visual and/or audible warning device and a telephone or radio transmitter. The skilled person would therefore conclude, as a matter of normal interpretation, that the alarm, image capture and communication devices form part of the system of claim 1 with specific examples claimed in claim 3. The observer does not dispute the presence of these features and I am satisfied from the requester's evidence that part (d) is present.
18. Part (e) was the subject of much disagreement between requester and observer, and requires careful consideration of its scope and meaning. A first issue is that the system is "*switched from a dormant state using an extremely small current to an active state requiring a significant but small current*". This ties in with the requirement for the system to be battery powered but the exact scope of the terms "*extremely small current*" and "*significant but small current*" are unclear since the description is silent on any specific numerical values. The description states that in a dormant state a minimal current is drawn sufficient to maintain the sensors in an operative condition and when one of the sensors detects the presence of an intruding body, the control circuit is switched to an active state in which sufficient current is drawn to

power the devices in an alarm output array (meaning the alarm, image capture and communication devices). The skilled person would interpret this to mean that a higher current is required in the active state compared to the dormant state and that both should be as low as possible to minimise battery power drain. Actual values would depend on the specific design of the control circuit, the sensors and alarm.

19. The observer argues that in normal use the Network Rail ODS operates on mains electricity and the RADAR and LIDAR sensors employed require significant current, giving figures of 10A peak, 1.2A active and 0.3A standby for the RADAR scanner. It is argued that in the event of a power failure the back-up batteries are rapidly depleted. This, the requester maintains, cannot be considered a small current or significant but small current as required by claim 1. The requester argues that figures of 0.3A and 1.2A fall within the scope of claim 1.
20. A second issue is that part (e) requires that the system is switched from dormant to active *“by signals originating from a variety of sensors”*. Does this mean the variety of sensors in preceding part (c) or some other sensors? The following passages from the description help to clarify:

*“It is generally convenient if the control circuit responds to information sent to it by the sensors only if arrival of a train is imminent. For this purpose a circuit 13 is provided which holds the control circuit in its inactive state until the approach of a train is indicated by the closing of level crossing gates and/or by the activation of warning lights”*.

*“When one of the sensors detects the presence of an intruding body, the control circuit is switched to an active state in which sufficient current may be drawn to power the devices in an alarm output array”*.

*“a switching circuit is provided which causes the control circuit to respond to a input from the sensor array only when gates on the level crossing are closed and/or warning lights are showing danger”*.

The skilled person would understand this to mean that the system is switched from dormant to active by the sensors when they detect an intruding body but that this can only occur when gates are closed or warning lights are showing danger, indicative of imminent arrival of a train.

21. The observer argues that the Network Rail ODS is switched to an active state *“by signalling from a location some miles away to send a signal to the Level Crossing Control system (LCC) that a train is approaching whereupon the LCC sends a start signal to the RADAR scanner which brings it out of standby and into calibration and scanning the crossing”*. Therefore switching is not triggered by the sensors used to detect an intruding body. The requester also argues that the LIDAR does not have a standby mode but is on and scanning all the time albeit with a protective shutter only opening when the crossing has been requested to open.
22. The requester argues that the remote signalling must comprise a sensor for an approaching train and that this can be considered one of the variety of sensors required by claim 1. Furthermore the requester argues that the LIDAR when shuttered is in a standby mode.

23. Firstly I am not convinced by the observer's argument that their RADAR current requirements fall outside the scope of claim 1 since actual values must be considered relative to the size of battery. However I do not think the question of infringement hangs on this point. Also I am not convinced by the requester's argument that the LIDAR sensor is in a standby mode using an extremely small current just because the shutter is closed. I note that Claim 1 requires *the system* to switch from a dormant to an active state. According to the description it is the control circuit which is switched from dormant to an active state in which sufficient current may be drawn to power the devices in an alarm output array. The sensors are maintained in an operative condition at all times albeit with a minimal current. Based on the submitted evidence, the Network Rail ODS does not appear to operate in this way.
24. As I have interpreted claim 1 in paragraph 19, it is the signals from the sensors when detecting an intruding body that must switch the system from dormant to active. The Network Rail ODS does not do this and so part (e) is not present.
25. Part (f) requires that "*activation of the unit is indicated by one or more LEDs whose primary function is diagnostic*". There is no antecedent in claim 1 for "*the unit*" but I believe the skilled person would understand this to mean "the system". According to the description the LED is mounted on the housing for the control circuit. The housing is described as a small weather and interference-proof box.
26. The observer argues that the Network Rail ODS does not have an LED as required by claim 1, stating that the only LEDs are inside the housing of the LIDAR scanner and inside the housing of the RADAR scanner which do not therefore indicate activation of the unit and are not diagnostic.
27. The requester argues that the LEDs of claim 1 do not have to be immediately visible and that any LED is implicitly diagnostic.
28. I am in agreement with the observer. The LEDs inside the individual LIDAR and RADAR sensors do not appear to indicate activation of the system. Indeed it is not clear from the submissions from either side what the LEDs actually indicate. I acknowledge that they can be considered diagnostic of something but this is, in my opinion, not enough to satisfy the claim. Therefore, based on the evidence provided, I consider part (f) to be absent from the Network Rail ODS.
29. In summary I do not consider that the Network Rail ODS infringes the patent as a matter of normal interpretation since it does not have parts (e) or (f) of claim 1.

### **Does the Network Rail ODS infringe because it varies from the invention in a way or ways which is or are immaterial?**

30. According to *Actavis UK Limited and others v Eli Lilly and Company [2017] UKSC 48* this is the second issue to address when considering whether there is infringement. The Court in *Actavis* provided a reformulation of the three questions in *Improver [1990] FSR 181* to provide guidelines or helpful assistance in connection with this second issue. These reformulated questions are:

- (i) Notwithstanding that it is not within the literal meaning of the relevant claim(s) of the patent, does the variant achieve substantially the same result in substantially the same way as the invention, i.e. the inventive concept revealed by the patent?
  - (ii) Would it be obvious to the person skilled in the art, reading the patent at the priority date, but knowing that the variant achieves substantially the same result as the invention, that it does so in substantially the same way as the invention?
  - (iii) Would such a reader of the patent have concluded that the patentee nonetheless intended that strict compliance with the literal meaning of the relevant claim(s) of the patent was an essential requirement of the invention?
31. In order to establish infringement in a case where there is no literal infringement, a patentee would have to establish that the answer to the first two questions was “yes” and that the answer to the third question was “no”.
32. The way in which the Network Rail ODS, is switched from dormant to active in part (e) is substantially different from that of the patent. Therefore it is my opinion the answer to the first two questions is “no”.

## **Opinion**

33. It is my opinion that the Network Rail Obstacle Detection System (ODS) does not fall within the scope of the claims as a matter of normal interpretation, nor does it vary from the patent in a way that is immaterial. Accordingly it is my opinion that the Network Rail ODS does not infringe the GB2424981 B.

## **Application for review**

34. Under section 74B and rule 98, the proprietor may, within three months of the date of issue of this opinion, apply to the comptroller for a review of the opinion.

GARETH GRIFFITHS  
Examiner

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## **NOTE**

*This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.*