

**OPINION UNDER SECTION 74A**

Patent	GB2585311 B
Proprietor(s)	Re-Gen Robotics Limited
Exclusive Licensee	
Requester	Kancelária pre patenty a ochranné známky
Observer(s)	Re-Gen Robotics Limited
Date Opinion issued	19 July 2022

**The Request**

1. The Comptroller has been requested by Mewburn Ellis LLP on behalf of Kancelária pre patenty a ochranné známky (“the Requester”) to issue an opinion as to whether actions regarding the KOKS-ESOT-system (“the Product”) developed by KOKS Robotics s.r.o. (“KOKS”) would constitute a direct infringement of patent GB2585311 B (“The Patent”) under section 60(1) of the Patents Act or amount to contributory infringement under section 60(2) of the Act.
2. The request was received from the Requester on 22 April 2022 and included a statement outlining the request. The Requester explained that they are writing on behalf of KOKS. The statement was accompanied by a description of the Product and a link to the KOKS webpage: <https://robotics.koks.com/koks-esot-system>.

**Observations & Observations in reply**

3. Observations were filed by Murgitroyd & Co Ltd on behalf of the proprietor of the Patent, Re-Gen Robotics Limited, (“the Observer”) on 23 May 2022.
4. Observations in Reply were received from the Requester on 6 June 2022.

**The Patent**

5. The Patent entitled ‘*Zero entry sediment removal from storage tanks*’ was filed on 23 September 2020 in the name of Re-Gen Robotics Limited and was granted on 26 May 2021. The Patent remains in force.
6. The Patent relates to apparatus and method for the removal of sediment from tanks

used for storing hazardous chemicals. A mobile tank cleaning apparatus comprises a road vehicle 15 in the form of a tractor and trailer. The tractor carries a multiple-section vacuum tanker, and the trailer carries a unit 25. Sediment is removed from a tank 60 via a robotic cleaner 30 which is operated by an operator situated in a controlled environment workstation 40 located inside the unit, thus removing the exposure of the operator to the hazardous zone in or around the storage tank.

7. The robotic cleaner 30 can be positioned in the tank 60 and is connected to the multiple-section vacuum tanker such that cleaning fluid is pumped to the robotic cleaner from a cleaning fluid reservoir section of the multiple-section vacuum tanker, and sediment is removed from the tank and transferred to a sediment-storage section of the multiple-section vacuum tanker. The multiple-section vacuum tanker has a movable piston 102 which varies the volume of both the sediment-storage section 104 and the cleaning fluid reservoir section 103 as cleaning fluid is pumped from the cleaning fluid reservoir section and sediment is transferred into the sediment-storage section. Figure 3 showing the overall system and Figure 10b showing the vacuum tanker are both reproduced below.

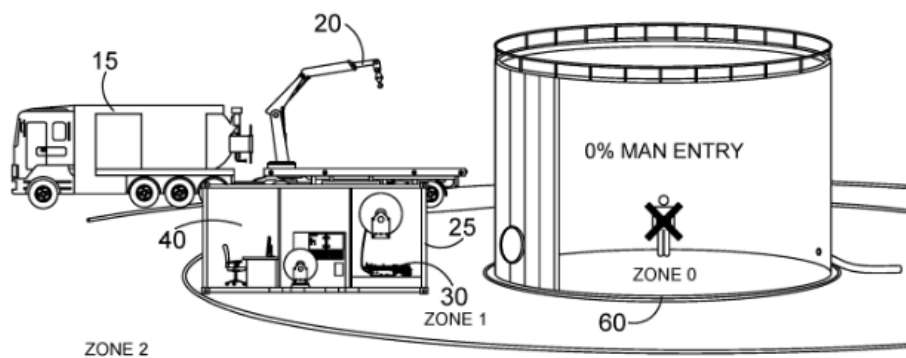


FIG. 3

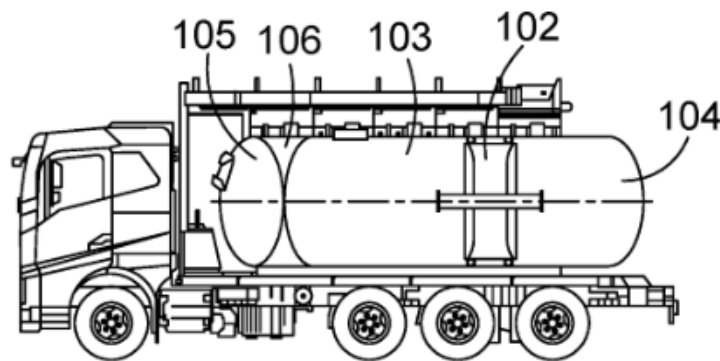


FIG. 10B

8. The Patent has 17 claims including one independent claim, claim 1. Claim 1 reads as follows with the features separated out as indicated by the Requester and also adopted by the Observer (Table 1).

<u>Claim Integer</u>	<u>Feature</u>
1.1	A mobile tank cleaning apparatus for sediment removal from a hazardous-storage tank, comprising
1.2	a road vehicle having an integrated lifting means,
1.3	[the road vehicle comprising] a multiple-section vacuum tanker, and
1.4	[the road vehicle comprising] a unit
1.5	wherein the road vehicle comprises a tractor carrying the vacuum tanker, and a trailer carrying the unit
1.6	the unit comprising a controlled environment operator workstation, a robotic cleaner, at least one umbilical hose, and a control centre
1.7	wherein the robotic cleaner is controlled via the control centre,
1.8	and wherein the umbilical hose is extendable in use between the robotic cleaner and the vacuum tanker,
1.7	such that cleaning fluid is pumped from the vacuum tanker to the robotic cleaner via a valve present in the unit,
1.8	and sediment is removed from the hazardous-storage tank and transferred to the vacuum tanker via the at least one umbilical hose during use,
1.9	wherein the unit is movable on and off the road vehicle; and
1.10	wherein the multiple-section tanker comprises at least a volume-variable cleaning fluid reservoir section and
1.11	[wherein the multiple-section vacuum tanker comprises] a volume variable sediment-storage section and
1.12	[wherein the multiple-section vacuum tanker comprises] a moveable piston,
1.13	wherein the volume of the cleaning fluid reservoir section and the volume of the sediment-storage section can be altered by moving the piston.

## **Infringement - the law**

9. Section 60(1) of the Patents Act governs what constitutes direct infringement of a patent:

*(1) Subject to the provision 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.*

10. Section 60(2) is concerned with indirect use of the invention or contributory infringement.

*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.*

11. In the Supreme Court in *Actavis v Eli Lilly*<sup>1</sup>, Lord Neuberger stated that a 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?*

12. If the answer to either issue is “yes”, there is an infringement; otherwise, there is not.

## **Construction of claim 1**

13. When considering whether the Product infringes the Patent, I will need to construe the claim(s). This means interpreting the claim in the light of the description and drawings as instructed by Section 125(1). In doing so, I must interpret the claim in context through the eyes of the person skilled in the art. Ultimately the question is what the person skilled in the art would have understood the patentee to be using the language of the claim to mean. This approach has been confirmed in the recent

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<sup>1</sup> *Actavis UK Limited and others v Eli Lilly and Company* [2017] UKSC 48

decisions of the High Court in *Mylan v Yeda*<sup>2</sup> and the Court of Appeal in *Actavis v ICOS*<sup>3</sup>.

14. Neither the Requester nor the Observer has defined the person skilled in the art. I consider this person to be a designer, manufacturer or operator of mobile tank cleaning systems.
15. I consider claim 1 to be straightforward to construe. There seems to be no dispute regarding how the skilled person would interpret any of the terms involved.

## The Product

16. The Product is the KOKS ESOT-system (where ESOT is an acronym for Equipment Set for Oil Tank cleaning). Information about the system can be found at the following webpage, cited by the Requester: <https://robotics.koks.com/koks-esot-system>. The webpage explains that the Product relates to a robotic system for tank maintenance in order to eliminate the need for personnel to enter a hazardous environment. The Product is used in combination with a vacuum truck for discharging and transporting fluid and hazardous substances. The robot is controlled by a person located in a transportable, vented cabin (TVC) where every movement of the robot can be seen on a television screen. The TVC is typically a standard sea container. Copies of photographs provided at the webpage and reproduced in the request are illustrated below. They show a user controlling the robotic cleaner from the TVC and the robotic cleaner itself.



Figure 1

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<sup>2</sup> Generics UK Ltd (t/a Mylan) v Yeda Research and Dev. Co. Ltd & Anor [2017] EWHC 2629 (Pat)

<sup>3</sup> Actavis Group PTC EHF v ICOS Corporation & Ors [2017] EWCA Civ 1671



Figure 2

17. The Requester also refers to EP Patent Application EP3389882B where some components of the Product, in particular the TVC and robot, are described in further detail.

### **Assessment of Infringement**

18. I will now consider whether the Product infringes the Patent.

#### **Consideration of the Product in relation to claim 1 - normal interpretation**

19. In accordance with the guidance above, I shall start by considering whether the Product infringes the Patent as a matter of normal interpretation. To do this, I shall consider the features of claim 1.
20. The webpage (and EP patent application) cited by the Requester provide a general overview of the robot and vented cabin as outlined above. However, as the Observer points out the webpage does not include information relating to the tanker or to the supply of cleaning fluid and removal of sediment. Instead, it is necessary to rely on information provided by the Requester in the statement accompanying the request which explains that the Product comprises a road vehicle (or vehicles) in the form of a tractor and trailer, where the road vehicle can be equipped with lifting means for moving the vented cabin on and off the vehicle. The Requester also explains that impurities are removed from the hazardous-storage tank at a suction head of the robotic cleaner and transferred to the vacuum tanker via a flexible hose. Meanwhile, the suction head is supplied with a high-pressure water jet which acts as a cleaning fluid.
21. The Requester explains further that there are multiple vacuum tankers which could be provided in the system for providing the water and for storing the impurities removed from the tank, all of which are fixed-volume vacuum tankers. Specifically, they clarify that there is a fixed-volume tanker for containing water for providing the water jet of the robotic cleaner and a fixed-volume tanker for receiving the sediment/impurities from the tank via the suction head of the robotic cleaner. The Requester concedes that these two fixed-volume tankers together may be considered to correspond to the claimed multiple-section tanker required by feature

1.3 of claim 1 of the Patent. However, they emphasise that the Product does not include any element which can alter the volume of the tanker for providing the water jet, or the sediment storage tanker.

22. The Requester concludes that the Product does not have at least features 1.10-1.13 of claim 1. (See Table 1 above.) Specifically, the Requester asserts that the Product does not have features (1.10) wherein the multiple-section tanker comprises at least a volume-variable cleaning fluid reservoir section, (1.11) a volume-variable sediment-storage section and (1.12) a movable piston, (1.13) wherein the volume of the cleaning fluid reservoir section and the volume of the sediment-storage section can be altered by moving the piston.
23. The Observer states that in the absence of evidence of the configuration of the one or more tankers of the Product (apart from in the request itself), I cannot provide an opinion as to the infringement of the Patent by the Product *per se*. Instead, they argue that this opinion may only relate to the system described by the Requester comprising a tanker (or tankers) having a fixed volume. In their observations in Reply the Requester re-emphasises that the tankers provided by the Product are precisely described in their request. Taking account of these views and based on my consideration of the claim and the product, I will proceed on the basis that the product does not exhibit features 1.10-1.13 of the claim identified above.
24. Therefore, the Product as described does not infringe claim 1 as a matter of normal interpretation. Specifically, the Product does not meet features 1.10-1.13 regarding a volume-variable tanker with a movable piston.

### **Consideration of the Product in relation to claim 1 - immaterial variation**

25. I shall now move onto the second issue namely whether the Product nonetheless infringes because it varies from the invention in a way or ways which is or are immaterial. This is where the Requester and Observer clearly disagree and therefore this section forms the key part of this opinion. To decide this issue, I shall consider the so-called *Actavis* questions:
  - (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?*
26. 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”.

27. Regarding the first *Actavis* question, it is useful to consider the inventive concept of claim 1. The Requester suggests the inventive concept to be as follows:

*“the inventive concept is that as the cleaning fluid is provided from the cleaning fluid reservoir section of the multi-section vacuum tanker, and as the sediment storage section of the multi-section vacuum tanker receives sediment from the tank, the movable piston is moved to reduce the volume of the cleaning fluid reservoir section, and to increase the volume of the sediment storage section.”*

28. The Requester refers to the fifth paragraph of page 10 which explains that *“The volume of each section can be changed and optionally maximised by moving the piston (102) present inside the vacuum tanker”*. The Requester notes that in contrast the fixed-volume tankers of the Product do not change volume and thus their volumes are not maximised during use. They conclude that the Product *“does not achieve substantially the same result as the inventive concept, let alone in substantially the same way”*.

29. The Observer argues that the Requester’s assessment of inventive concept focusses solely on the variable volume aspect of the claim and ignores essential features of the invention. The Observer submits that the *“claimed invention provides a mobile tank-cleaning apparatus in which each element of the system is provided in a self-contained mobile unit that may be delivered to site and function independently”*. They argue further that no additional equipment is required other than that contained on the mobile unit and only a single operator is required. They refer to the final paragraph of the description which refers to such an “all-in-one” mobile tank cleaning apparatus to support their argument. The Requester suggests the inventive concept to be:

*“the ability to provide a single, self-contained and single-operator unit, comprising a remotely operated robotic cleaner. The system is capable of lifting the robotic cleaner via integrated lifting means (crane) to locate the robotic cleaner, pumping cleaner fluid from a vacuum tanker to the robotic cleaner; and remove sediment from the tank being cleaned and transfer it back to a vacuum tanker.”*

30. The Observer continues that the variant of the Product is therefore *“an arrangement that includes two fixed volume tankers or tanker sections, rather than a variable volume tanker”*. The Observer submits that by *“providing two tankers that are respectively capable of supplying cleaning fluid to a robotic cleaner and removing sediment via a hose connected to the robotic cleaner, the KOKS ESOT-system provides a self-contained system that can facilitate every step of the remote sediment removal and cleaning of a Zone 0 storage tank without the requirement for any additional apparatus.”* They conclude that this variant achieves substantially the same result in substantially the same way as the invention.

31. In their observations in reply, the Requester argues further that features 1.10 and 1.11 regarding the volume-variable sections are essential features of the invention and the moveable piston of feature 1.12 is a technical arrangement for realizing the



function of feature 1.13 such that the volume of the two sections can be altered by moving the piston. They emphasize further that the fixed volume tankers of the Product cannot perform the function of changing the volume in which the fluid or liquid is retained in order to use the space more efficiently. They submit that two fixed volume tankers cannot be considered technically equivalent to the volume-variable tanker with a moveable piston as required by claim 1.

32. In response to these arguments, I first return to the Patent. The vacuum tanker with its volume-variable sections is described on pages 10-12. In the last paragraph on page 10 we are told that the piston 102 can be moved from a first position (Fig. 10a, not shown here) where the volume of the cleaning fluid reservoir section is maximised and the volume of the sediment-storage section is minimised through an intermediate position (Fig. 10b, reproduced above) and then to a final second position (Fig. 10c, not shown here) where the volume of the sediment-storage section is maximised ready for acceptance of the sediment being removed from the storage tank, and the volume of the cleaning fluid reservoir is minimised. The skilled person is also informed that "*Optionally, the piston may be moved to any number of positions in between the first and second positions to allow a user to vary the relative volumes of the section should this be suitable for the operation of the invention*". On page 11, the Patent describes how the position of the piston may be controlled by the operator by applying pressure as required or optionally moved automatically based on certain operating parameters. On page 12, we are told that the "*piston (102) is moveable along the length of the vacuum tanker (35) in order to increase or reduce the volume of the two distinct sections of the largest portions of the vacuum tanker: the cleaning fluid reservoir section (103); and the sediment-storage section (104)*".
33. Therefore, the Patent describes in some detail the operation of the vacuum tanker. There is no mention of a fixed-volume vacuum tanker in any embodiment of the Patent. The Observer refers to the final paragraph of the description which emphasises the 'all-in-one' nature of the mobile tank cleaning apparatus. However, the skilled person would understand that the process of sediment removal from the storage tank referred to in this paragraph is carried out by the volume-variable vacuum tanker described in the embodiments. A volume-variable vacuum tanker is required to meet both the apparatus and method of the invention as stated on page 2 of the description. The skilled person would realise that volume-variable sections form an essential, technical feature of the invention and therefore form part of the inventive concept of claim 1.
34. The inventive concept of claim 1 in my view is:

*a mobile tank cleaning apparatus that is able to remove sediment from a hazardous-storage tank using an all-in-one system where a robotic cleaner is controlled from within a unit located outside the tank, such that cleaning fluid is pumped from a vacuum tanker to the robotic cleaner and sediment is removed from the tank to the vacuum tanker, and the vacuum tanker comprises a volume-variable cleaning fluid reservoir and a volume variable sediment-storage section where the volume of both sections can be varied during operation of the invention.*

35. The problem the invention aims to overcome is outlined on page 2 of the Patent as

one of sediment removal from hazardous storage tanks without exposing human persons to hazardous operating conditions. The Product is a mobile system that is able to remove sediment from such a hazardous-storage tank using a remotely controlled robotic cleaner and therefore addresses the same problem as the invention. However, the Product is not able to achieve the same result in the same way as the invention. Specifically, the system of the Product is not associated with a vacuum tanker for which the relative volumes of the two sections can be altered during different stages of the process. The skilled person would realise from the Patent as a whole that this is an essential feature of the invention that improves the operation of the invention.

36. Therefore, in my view the answer to the first of the Actavis questions is 'No'. There is no need for me to consider the other two questions.

### **Consideration of possible indirect use of the invention (“contributory infringement”)**

37. The Requester also considers whether the supply, or offer to supply, of the Product could amount to contributory infringement under section 60(2) of the Act. They explain that the Product is intended to be used with the KOKS fixed-volume vacuum tankers and is not universally compatible with third-party vacuum tankers. They explain further that the use of the Product with a third-party vacuum tanker would require modifications to the Product to make the two components compatible, which would be costly and time-consuming. They conclude that it is clear to the reasonable person that the Product is not suitable for use with, or intended for use with, a variable-volume vacuum tanker having a movable piston for altering the volume, and therefore any supply/offer to supply of the Product in the UK would not amount to contributory infringement of claim 1 of the Patent.
38. The Observer has not made any comments regarding contributory infringement.
39. In response, as discussed above, the Product does not exhibit features 1.10-1.13 of claim 1 regarding the volume-variable sections of the vacuum tanker. I have also concluded that such a vacuum tanker is essential to the invention. Based on the information provided to me, I do not consider it would be obvious to a reasonable person that the Product is suitable for putting the invention into effect as it would require, as the Requester points out, modification of the Product to make it compatible with the necessary volume-variable vacuum tanker. It is therefore my view that any supply/offer to supply of the Product would not amount to contributory infringement of claim 1 of the Patent.

### **Dependent claims**

40. I have found that the Product does not fall within the scope of claim 1 of the Patent. The remaining claims 2-17 all depend on claim 1 and therefore the Product does not fall within the scope of these claims. It is not necessary for me to consider the dependent claims any further.

## **Opinion**

41. It is my opinion that actions regarding the Product (KOKS ESOT-system) will not constitute a direct infringement of the Patent.
42. It is also my opinion that actions regarding the Product will not amount to an indirect (contributory) infringement of the Patent.

## **Application for review**

43. 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.

Susan Dewar  
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.*