



PATENTS ACT 1977

APPLICANT Smartglyph Limited

ISSUE Whether patent application GB1612429.9 complies
with section 1(2) of the Patents Act 1977

HEARING OFFICER J Pullen

DECISION

Introduction

- 1 Patent application GB1612429.9, entitled "A scanning system", was filed 18th July 2016 with no declared priority date. It was published as GB 2552329 A on 24th January 2018.
- 2 The application received combined search and examination with the report dated 12th January 2017. There have been subsequent rounds of correspondence with the examiner raising various substantive objections which have been overcome by amendment, apart from an objection to excluded matter which remains outstanding.
- 3 The matter came before me at a hearing on 24th November 2020, held via videoconference, at which the applicant was represented by Dr Brian Nicholson QC and Ms Kyra Nezami of 11 South Square & Mr Christopher Aldridge of Mohun Aldridge Sykes. Dr Nicholson presented the applicant's submissions at the hearing.
- 4 I am grateful to Dr Nicholson for the submission of skeleton arguments in good time before the hearing. I confirm that in reaching my decision I have taken account of all documents on file and the submissions made at the hearing.
- 5 I note that the examiner has deferred update of the search and completion of the examination. The matter before me is whether the claimed invention is excluded as a program for a computer as such and/or the presentation of information as such. If I find the claimed invention allowable then it will be necessary for me to remit the application back to the examiner to complete the search and examination.

The invention

- 6 As recited in the 'Field of the Invention' section of the description as filed (page 1, lines 15-16):

“The invention relates to a system for scanning codes and, more particularly, to a system for augmenting scannable codes to provide enhanced information and content.”

- 7 As stated in the ‘Summary of the Invention’ section of the description (page 2, lines 6-17):

“The system allows for a scannable element to be scanned by, for example, a Smartphone, and for the scanned information to be used to provide further content related to the element. Once the element has been scanned a check is performed to see whether the information in the element is associated with a two-dimensional code. Where a match is found, the two-dimensional code is decoded and in doing this a vector is provided to identify active data, for example rich media such as videos, images and documents, that are then forwarded to the scanning device. The system does not send a hyperlink to the device or direct the device to a webpage, it sends active data, files and/or rich media directly to the device.”

“As the system can use existing barcodes and augments them, it can be retrospectively applied to any existing barcode and the object being scanned does not need to be changed in order to accommodate the system of the present invention.”

- 8 Since filing, the claims have been amended. The current claim set, dated 18th September 2019, comprises a single independent claim, claim 1:

“A system comprising:

a scanning device; and

a physical scannable element;

wherein, the scannable element is optically captured by the scanning device and a database is interrogated to identify whether a two-dimensional code is linked to the scannable element and, where a two-dimensional code is identified in the database, that;

the two-dimensional code is decoded and translated into a vector to identify rich media stored on a server; and

the vector is then sent to the server via a suitable network and the rich media is identified and pushed to the scanning device.”

The law

- 9 The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention is not patentable because it relates to a category of excluded matter. The relevant provisions of this section of the Act are shown below, with my emphasis added:

1(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of-

(a) ...;

(b) ...;

*(c) ... **a program for a computer;***

*(d) **the presentation of information***

*but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a **patent or application for a patent relates to that thing as such.***

10 The Court of Appeal has said that the issue of whether an invention relates to subject matter excluded by Section 1(2) must be decided by answering the question of whether the invention reveals a technical contribution to the state of the art. The Court of Appeal in *Aerotel/Macrossan*¹ set out the following four-step approach to help decide the issue:

(1) Properly construe the claim;

(2) Identify the actual contribution;

(3) Ask whether it falls solely within the excluded subject matter;

(4) Check whether the actual or alleged contribution is actually technical in nature.

11 The operation of the approach is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is an exercise in judgment involving the problem said to be solved, how the invention works and what its advantages are; essentially, what it is the inventor has really added to human knowledge, looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.

12 In *Symbian*² the Court of Appeal reaffirmed the *Aerotel* approach while considering a question of “technical contribution” as it related to computer programs emphasising the need to look at the practical reality of what the program achieved, and to ask whether there was something more than just a “better program”.

13 The case law on computer implemented inventions was further elaborated in *AT&T/CVON*³ which provided five signposts which it may be helpful to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*⁴, Lewison LJ reconsidered the fourth of these signposts and felt that it expressed too restrictively. The signposts, as updated, are:

i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;

ii. whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;

iii. whether the claimed technical effect results in the computer being made to operate in a new way;

iv. whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer;

v. whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

¹ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

² *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1

³ *AT&T Knowledge Ventures/Cvon Ltd* [2009] EWHC 343 (Pat)

⁴ *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

- 14 I must bear in mind that the signposts are guidelines for a technical contribution and should not be applied in a prescriptive manner. I must decide whether the claimed invention makes a technical contribution when considered on its own merits.
- 15 Dr Nicholson agreed that the above approach was correct.

Assessment

(1) Properly construe the claim

- 16 Although the examiner had not previously considered there to be any issue regarding how the claim would be construed by the skilled person, Dr Nicholson argued that the examiner had fallen into error when construing the scope of the claimed invention. This related to how the term “two-dimensional code” as recited in claim 1 would be interpreted by the skilled person in the art.
- 17 Dr Nicholson informed me that when the applicant is using this term, it does not mean that the code has two physical dimensions, as is the case for the well-known QR-Code (RTM), for example. Instead, what the applicant intends is that the code has two different “data dimensions”: the first dimension is taken from, or relates to, the physical scannable element and the second dimension is related to something else, such as personal details of a user, the time when the scanning takes place or the location when the scanning takes place, though it could be any other type of information which would help to provide personalised, user specific, or otherwise augmented, rich media to the scanning device.
- 18 As an aid to this construction, Dr Nicholson directed me to an example embodiment at page 4, lines 23-27 of the description as filed:
- “The system can be associated with a user's details and so can automatically complete information that might be requested. This allows a user to scan a warranty barcode on, for example, an electrical item, and the user's details to be sent directly to the manufacturer whilst forwarding active data in the form of a completed warranty certificate to the scanning device. Additionally, the system allows for brand engagement.”*
- 19 To illustrate this further, Dr Nicholson submitted that in the prior art, if each person present at the hearing were to scan a warranty barcode on a toaster, we would each be directed to the same static data, such as a website, and we would individually have to fill in our own personal details, name, address, etc for the warranty.
- 20 Dr Nicholson contrasted this to the claimed present invention. The invention provides a two-dimensional code that is a product, or combination of, two components of data: that is data related to the scannable element and also additional information, such as personal details as set out in the warranty example. The scannable element is linked to the two-dimensional code in the database of the invention and augments the data associated with the scannable element with the additional information. This provides the augmentation of scannable code mentioned in the ‘Field of the Invention’ section of the description repeated above. The two-dimensional element represents an augmented scannable element and the decoding of the two-dimensional code may result in the creation of “bespoke” rich media, such as the completed warranty. However, Dr Nicholson acknowledged that this was not necessarily the case and the

rich media may be pre-existing, but it is selected on the decoding of the two-dimensional code and its association with the scannable element. In short, the two-dimensional code is the terminology used by the applicant to explain the augmentation process itself. Dr Nicholson further acknowledged that the claim, and the description as whole, did not specify the types of data that form the components of the two-dimensional code, but submitted that the two-dimensional code must be linked to the scannable element in the database and the two-dimensional code could be formed of a variety of types of augmented data.

- 21 Dr Nicholson then acknowledged that there was no explicit definition of the nature of the two-dimensional code in the specification as filed but stated that one had to undertake a purposive construction of the term in light of the stated purpose of the invention. He proposed that this was the expansion of the limited static data associated with a scannable element by linking the scannable element to further data to provide augmented data by means of the two-dimensional code in the database.
- 22 Dr Nicholson also reminded me that the patent must be read as a whole and must be read consistently. I confirm I have done this.
- 23 Dr Nicholson also referred to the judgment in *Icescape v Ice-World*⁵ with respect to the construction of the claims, and in particular applying a purposive construction to the claims. In terms of pure construction, this judgment summarises Lord Neuberger in *Actavis UK Ltd v Eli Lilly & Co*⁶ at paragraph 60:

“a patent is a unilateral statement by the patentee, in words of his own choosing, addressed to persons skilled in the art, by which he informs them what he claims to be the essential features of his invention. Indeed Lord Neuberger himself made clear at [54] that issue (i) must be considered through the eyes of the skilled addressee, and at [56] that issue (ii) involves not merely identifying what the words of the claim would mean in their context to the addressee (in other words, I interpolate, issue (i)), but also considering the extent to which the scope of protection should extend beyond that meaning. So I have no doubt that (despite Lord Neuberger's use of the term "literal" in considering issue (ii) and to which I will come in a moment) issue (i) involves purposive interpretation.”

- 24 I also note the comments of Floyd LJ in the *Icescape* judgment at paragraphs 93 & 94:

“93. One would be forgiven for thinking that Article 69 was proposing a purely interpretative approach to determining the scope of protection. At least on a first reading, Article 69 appears to say that the claims determine the scope of protection, subject to their proper contextual interpretation. Article 69 was however further explained in the Protocol on its Interpretation. Article 1 of the Protocol provided;

“Article 69 should not be interpreted as meaning that the extent of the protection conferred by a European patent is to be understood as that defined by the strict, literal meaning of the wording used in the claims, the description and drawings being employed only for the purpose of resolving an ambiguity found in the claims. Nor should it be taken to mean that the claims serve only as a guideline and that the

⁵ *Icescape Ltd v Ice-World International BV & Ors* [2018] EWCA Civ 2219

⁶ *Eli Lilly v Actavis UK Ltd & Ors* [2017] UKSC 48

actual protection conferred may extend to what, from a consideration of the description and drawings by a person skilled in the art, the patent proprietor has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patent proprietor with a reasonable degree of legal certainty for third parties."

94. Two extreme approaches were rejected by the Protocol. The first was one where the strict literal wording of the claims had to be adopted, subject only to an exception where the claims were ambiguous and resort could be had to the description and drawings to resolve it. The second was one where the claims were a mere guideline, with the protection extending to anything which the description and drawings tells one the patentee has contemplated. The approach mandated by the Protocol was one "between these extremes" which combines a fair protection for the patent proprietor with a reasonable degree of legal certainty for third parties."

- 25 I accept that the applicant or patentee may be their own lexicographer, but if the applicant is using an expression in a particular way, especially when that may differ from the understanding which the skilled person in the art may have, or that expression may be ambiguous, then there should be some indication of the meaning of the expression in the specification as filed. A "two-dimensional code" in this context potentially has a regular and expected meaning i.e. a code which has two physical dimensions and uses both those dimensions in order to encode data. An example would be a known form of matrix code, such as the QR-Code (RTM) mentioned above.
- 26 When considering the specification as whole, as Dr Nicholson invited me to do at the hearing, I note that the description, at page 3, line 24 to page 4, line 12 states the following:

"A user scans a barcode (1-dimensional or 2-dimensional) on a product and the information is forwarded to a processing unit. The processing unit is provided with access to a database of known barcodes which is then interrogated to see if the scanned barcode has augmented data prepared. Where match is discovered, the barcode is linked to a two-dimensional code, for example a code as set out in WO2014155115. More specifically, a two dimensional code formed of an array of equal-area elements, each element being the smallest representation of a data value, wherein each element is one of the following types of element: a first type wherein the entire area of the element is a single colour; or a second type wherein the area is divided into at least two colours, each colour filling 50% of the element; and wherein the array has a plurality of the second type of element.

Furthermore, at least one the second type of element may comprise a diagonal line running from one corner to a diagonally opposing corner or a line running from one side to an opposing side. In such an arrangement, there may be a plurality of each of the second type of elements in the code.

Once an associated two-dimensional code has been located, the two-dimensional code is decoded in order to provide a vector. The vector points to active data on a server and the vector is sent to the server, which then pushes active information in the form of rich media to the scanning device to be displayed thereupon. The active data may be in the form of a menu from which the user may select information regarding the supplier and/or manufacturer, or where marketing material or interactive media is available."

- 27 These paragraphs tell the reader that the two-dimensional code may be, though is not necessarily, a code as found in the applicant's earlier application WO 2014/155115, which describes a scannable optical code having two physical dimensions and is said to be more easily and consistently read by a scanning device. A scanning process in which the two-dimensional code is decoded in order to obtain a vector which is sent to a central server which, in turn, returns active data to the scanning or capturing device is also described in this document. There is no disclosure in the document to support Dr Nicholson's interpretation of the meaning of a two-dimensional code nor is there any disclosure that user specific data is encoded by the two-dimensional code of WO 2014/155115.
- 28 The claimed invention is also illustrated in the description by way of further embodiments. These include examples where the scannable element is linked to a returns system for returning a product to a supplier and an example where the system is employed in relation to medical samples. What could or should constitute the two-dimensions of data within the two-dimensional code in Dr Nicholson's construction of the claimed invention is not disclosed in these examples. For these reasons I am unable to agree that "two-dimensional code" should be given the construction put to me at the hearing.
- 29 The correct construction of the "two-dimensional code" is that it should at least include the type of two-dimensional code found in WO 2014/155115. Of course, a physical code cannot be stored in a database, but a representation of that fixed code could be. The skilled person in the art, having read the specification as a whole, would understand that the "two-dimensional code" of the claimed invention was intended to include a database representation of a physical, fixed, two-dimensional code.
- 30 It follows that a person skilled in the art would not understand that the claimed invention requires the augmented data transferred to the scanning device to have any user specificity regarding its content, though doing so would fall within the scope of the claimed invention.
- 31 The remaining features of the claims are easily construed given the description and the examples found within it: the scanning device includes such devices as a smartphone; the physical scannable element includes 1-D or 2-D barcodes, alphanumeric strings, images, etc, as found at page 2, lines 19-27 and page 3, lines 24-25; the vector is used to located rich media on a server; rich media includes videos, documents and images, which may or may not be user specific.
- 32 I believe that the skilled person in the art would construe the claim as it is set out. Construing the claimed invention in this manner appears to be consistent with the teaching of the specification as a whole and fulfils the purpose of the invention in terms of providing rich media to the scanning device. I can see no reason why the skilled person would not think this was the case from reading the very limited disclosure in the specification as a whole.

(2) Identify the actual contribution

- 33 During the exchange of correspondence between the agent and the examiner, the actual contribution made by the present invention was said by the agent in their letter of 12th November 2019 to be:

“to take existing scannable elements, such as barcodes or alphanumeric strings, scan them using a scanning device, associate that scannable element with a two-dimensional barcode and push rich media to the scanning device in response to the scanning of a scannable element, without the need to user interaction. Thus, once the scannable element has been scanned, rich media is provided to a user in a quicker and more reliable manner than previous methods, because, in part, no user input is required. Therefore, the present invention makes the process run quicker and more reliably than the prior art systems, which creates an augmented scannable element to which one can link important information, such as allergen information.”

- 34 The examiner, in the letter inviting the applicant to attend a hearing to decide the matter, issued on 25 June 2020, considered the actual contribution to be:

“a system in which a scan of a physical element is used to interrogate a database to identify if a two-dimensional code is associated with the element and if so converts the code to a vector which is sent to a server causing it to push rich media to the device. This has advantages in being an easy to set-up and maintain mechanism for users to obtain rich media associated with elements.”

- 35 During the hearing, Dr Nicholson stated that the actual contribution made by the claimed invention, when given his proposed construction, was:

“a system which augments generic barcodes and other existing scannable elements by linking those elements with a two-dimensional code that includes augmented data, thereby augmenting the scannable code which can then be used to provide rich media to the scanning terminal.”

- 36 When considering this application, I think care must be taken as to how and when the term ‘augments’ (and other derivatives) are used in order to avoid confusion. It is clear from the application that augmented data (rich data) is provided to the user via its association with a two-dimensional code which is also associated with a scannable element. It is also clear from the description and the claims that it is not necessary for the information in the two-dimensional code to form part of the augmented data, although this could be a possibility.

- 37 Given that I have rejected Dr Nicholson's construction of the claim, I cannot accept his proposed contribution of the present invention, since on reading the application the skilled person in the art would not think that the two-dimensional code must include the augmented data as a matter of necessity.

- 38 Noting the guidance in *Aerotel* relating to the formulation of the actual contribution, I note that the invention works as set out in paragraph 7 above. The problem to be solved by the invention is to augment existing barcodes and QR codes by providing additional rich media to a scanning device, as opposed to the static information that is normally returned. The user of the scanning device benefits by receiving the rich media sent to them, rather than being able to access only basic information from scanning the scannable element. Also, the present invention may allow for brand

engagement, as set out on page 3, lines 14-20 of the description, though this is not an essential feature of the claimed invention.

39 I also note that the prior art patent application referred to in the description of the present application, WO 2014/155115, discloses the decoding of a two-dimensional code in order to obtain a vector, which is transmitted to a server so that rich media, such as a video, can be returned to the scanning device.

40 From the above, I believe that the actual contribution made by the claimed invention is a system to augment the information provided via scanning a physical scannable element by transferring rich media to a scanning device, in which the scanning device scans the scannable element and interrogates a database in order to determine whether or not a two-dimensional code is linked with the scannable element and, where a two-dimensional code is identified in the database, the two-dimensional code is decoded and translated into a vector to identify rich media stored on a server, the vector is then sent to the server via a suitable network and the rich media is identified and pushed to the scanning device.

(3) Ask whether it falls solely within the excluded subject matter;

(4) Check whether the actual or alleged contribution is actually technical in nature.

41 At the hearing, Dr Nicholson confirmed that these two steps of the approach could be considered together and I shall do that here.

42 The actual contribution I have identified above is clearly embodied in software given that a database is interrogated, a server receives the vector and returns the rich media identified by the vector. It follows that reference to the *AT&T* signposts may be useful. The examiner and the applicant's agent largely concerned themselves with consideration of signposts 1 and 5. Dr Nicholson considered this to be correct and stated that the present invention is not the type of invention to which signposts 2 to 4 are useful: the present invention does not relate to a better computer or how the computer works as a matter of principle. I agree that these signposts are not applicable to the present invention.

43 Based upon his construction of the claimed invention, Dr Nicholson contended that signposts 1 and 5 both pointed to invention having a technical contribution. However, having rejected Dr Nicholson's interpretation of the claimed invention and his contribution, I must consider the signposts in relation to my interpretation of the contribution.

44 In relation to the first signpost, does the claimed technical effect have a technical effect on a process which is carried on outside the computer? In my opinion it does not. The contribution relates to the linking of a scannable element to a two-dimensional code in a database, and using a vector obtained from decoding the two-dimensional code to retrieve rich media from a server, therefore allowing rich media to be obtained from the scan of an existing scannable element. This is fully within the computer system of the scanning device and the server, and noting the judgement of

*Lantana*⁷, this is internal to a computer within the meaning of the signpost. There is no technical effect beyond the retrieval of the rich media from the server, and the transfer of files between the system components is entirely conventional.

- 45 Also in relation to this signpost, Dr Nicholson attempted to draw an analogy to the recent decision in *Lenovo*⁸, on the basis that the invention, as was found in *Lenovo*, does not require any additional user interaction in order to control the functionality of the system. In particular, the present invention allows the user of the scanning device to gain user specific rich media from the server without the user having to manually input any of their details.
- 46 Having rejected Dr Nicholson's construction of the claimed invention and submission for the contribution of the claimed invention, it follows that the above argument fails. There is no requirement that the claimed invention necessarily returns user-specific rich media, so no user input is saved.
- 47 In relation to the fifth signpost, it is my opinion that the perceived problem, as set out in the specification, does not relate to a technical problem. The issue addressed relates to the provision of information to a user that augments (adds to) the information that is usually associated with scanning a scannable element, such as a barcode. It uses pre-existing scannable elements of a wide variety of types, as set out in the description, by means of an association between the scannable element and the two-dimensional code in a database. Whilst the invention avoids the need to provide additional scannable elements on items or articles in order to provide users with access to rich media, it does require a link between the scannable element and the two-dimensional code in a database. This is no more than a computer program that is used to embody the database of the claim. Whilst different information may be provided to the user of the scanning device, this aspect in itself relates to the presentation of information, another of the excluded categories. The fifth signpost does not assist the applicant.
- 48 Stepping back, and considering the claim as a whole, the invention relates to the association of a scannable element to rich media stored on a server by means of a link between the scannable element and a representation of a two-dimensional code in a database. The computers involved in the invention, the scanning device and the server, are unchanged and the connection between the computers must be considered to be conventional as there is no hint to contrary in the specification as a whole. The invention avoids the need to provide additional scannable elements on articles or items which the user can use to receive rich media, but does so by means of a computer program in terms of the claimed database. The invention does not provide a technical solution to a technical problem: the problem relates to the access of rich media and the solution relates to a computer program. This is not technical in nature.
- 49 In light of the considerations above, I find that the present invention is excluded from patentability as a program for a computer, as such.

⁷ *Lantana Ltd v Comptroller General of Patents* [2014] EWCA Civ 1463

⁸ *Lenovo (Singapore) PTE Ltd v Comptroller General of Patents* [2020] EWHC 1706 (Pat)

50 With respect to the matter of the presentation of information exclusion, I make no decision.

Other considerations

51 When discussing the Aerotel approach and its application, Dr Nicholson stated that he accepted, in line with the comments of Lewison J (as he then was) in *Kapur's Application*⁹, that the whole of the contribution was required to provide a technical contribution. If there were implementations or embodiments within the scope of the claimed invention which did not give the technical contribution, then the claim was problematic in relation to excluded matter.

52 I should also note that even if I am incorrect about how the skilled person in the art would construe the invention of claim 1, it is my opinion that the skilled person would still find that the claimed invention encompasses the construction I have set out above. The subject matter of this construction is excluded from patentability for the reasons given above. This means that, following the guidance provided in *Kapur's Application*, the invention as claimed is excluded from patentability.

Conclusion

53 The application does not comply with section 1(2) as it relates to a program for a computer, as such. I therefore refuse the application under section 18(3).

Appeal

54 Any appeal must be lodged within 28 days after the date of this decision.

J Pullen

Deputy Director, acting for the Comptroller

⁹ *Kapur v Comptroller General of Patents, Designs & Trade Marks* [2008] EWHC 649 (Pat)