



PATENTS ACT 1977

PARTIES	Wei Xu
ISSUE	Whether patent applications GB2108136.9 and GB2108137.7 comply with sections 1(1)(b), 1(2) and 3 of the Patents Act 1977
HEARING OFFICER	Ben Buchanan

DECISION

Background

- 1 This decision relates to whether patent applications GB2108136.9 and GB2108137.7 comply with sections 1(1)(b), 1(2) and 3 of the Patents Act 1977 (“the Act”).
- 2 GB2108136.9 was published as GB2593103A; GB2108137.7 as GB2593383A. Both were lodged on 8 June 2021 claiming divisional status from application GB1521949.6 / GB2530940A, which was the national phase of a PCT application published as WO2015/003476 (in Chinese). They are in fact part of a family of nine divisionals. The earliest priority date of the application is 8 July 2013. Consequently, it is now some nine years since the earliest date, and that time period should be borne in mind when considering the invention.
- 3 In view of their divisional status, combined search and examination of the applications was carried out. At that stage objections were raised on each, the principal objections against both applications being that they were not inventive based on the disclosures of the Applicant’s prior application WO2012/142937 (EP2701112) and were not patentable as being nothing more than a program for a computer and/or a method for doing business. As such, they fell within the exclusion from patentability of section 1(2)(c) of the Act.
- 4 For each application, the lack of inventive step and the lack of patentability objections were reiterated through several rounds of re-examination and amendment.
- 5 With respect to GB2108136.9, the Applicant requested a hearing in their letter accompanying the amendments submitted on 16 February 2022, in the event that the Examiner did not consider the objections to have been resolved. The Examiner issued a further report on 3 March 2002, and following further amendment (7 March 2022) another examination report on 8 April 2022. At this stage the extended section

20 compliance period had expired on 8 March 2022. Among other objections set out in the examination report of 8 April was the expiry of the section 20 date and a refusal to allow any further discretionary extensions of time.

- 6 In their letter of 6 May 2022 accompanying further amendments, the Attorney requested an extension to the section 20 date and a hearing on the issue should it be refused. They also maintained their previous request for a hearing on the substantive issues.
- 7 The history of GB2108137.7 is similar, but the specific dates of correspondence differ. The Applicant requested a hearing in their letter accompanying the amendments submitted on 14 February 2022, if the objections persisted. The Examiner issued an examination report on 9 March 2002, and further amendments were received on 11 April 2022. The extended section 20 date had expired on 8 March 2022. A request to extend the section 20 period was filed on 11 April 2022 and this was refused in a letter dated 20 April 2022.
- 8 A hearing was initially arranged to decide the issue of extending the section 20 compliance period for each of these cases. However, upon considering the correspondence on each application in detail, I considered that the initial request for a hearing on the substantive issues concerning sections 1(1)(b), 1(2) and 3 should stand. These requests had been made before the compliance period had expired in both cases and had been overlooked by the Examiner in favour of re-examining the application. It seemed to me that the original request should be honoured and the claims considered as they stood at the time. Consequently, before the hearing, I allowed the further discretionary extensions of time as would normally be the case pending a hearing decision in case the application is remitted to the Examiner for an amendment permitted by and consequential to the decision.
- 9 The matter is now a little complicated because amendments had been filed since the hearing request, in response to the most recent examination report in each case, and yet the extension to the compliance period had been initially refused and so these amendments had not been formally accepted or fully considered. It seemed right, and pragmatic, to me to base my decision on the most recent claims as they stood at 8 March 2022, and should I uphold the Examiner's objection, to consider whether the amendments filed since would change that decision. I explained this to the Attorney who agreed on behalf of the Applicant.
- 10 The issues to be heard were therefore whether the applications were in order at the section 20 date at the time the hearings were originally requested; i.e. whether for GB2108136.9 the amendments filed on 7 March 2022 and for GB2108137.7 the amendments of 14 February 2022 met requirements. Because of the course each application has taken, there is no "Pre-hearing Letter" summarising the substantive issues on either file. The position to be addressed then, is that set out in the latest respective examination report following these amendments; namely that issued 8 April 2022 (GB2108136.9) and 9 March (GB2108137.7).
- 11 The matter came before me in a single hearing on both cases. This was held on 24 June 2022 at which the Applicant was represented by Philip Sanger of Grey Wolf IP (hereafter "the Attorney"). Skeleton arguments were helpfully provided in advance of

the hearing. The hearing was also attended by my hearing assistant, Jason Scott, and an observer.

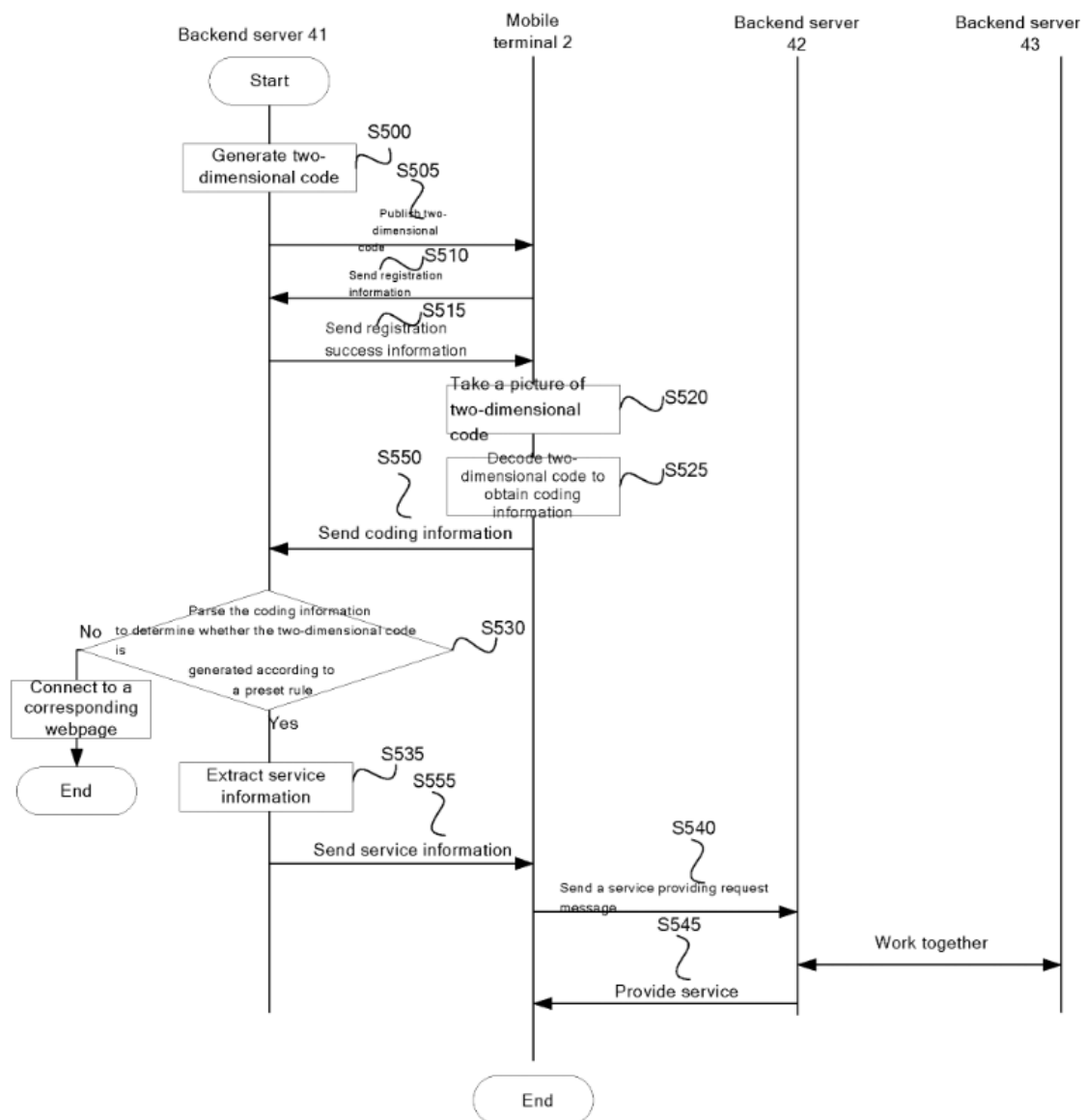
- 12 The matters to be decided for each application are whether or not the inventions are excluded under section 1(2) as being a method for doing business and/or a program for a computer and whether they define an inventive step in accordance with sections 1(1)(b) and 3. At the times of the last examination, there were some objections raised in respect of clarity, support, sufficiency (section 14) and added matter (section 76(2)). I will not formally decide these issues. I will only consider them in so far as they concern the determination of patentability and inventive step. If those two requirements are met, then I will remit the application for amendment and re-examination for compliance with sections 14 and 76.
- 13 At the hearing most of the time was spent discussing GB2108136.9 first, and then the same arguments applied by extension to GB2108137.7. I shall take the same approach here, discussing GB2108136.9 in detail, and commenting on GB2108137.7 where necessary.

Subject matter

- 14 The applications are both titled “Method and device for communication using barcode image, and wearable component with embedded sensing core engine”. This is a general reflection of the original application and does not specifically identify the present inventions. The overall concept relates to a system comprising one or more barcodes which are scanned by and/or displayed on one or more mobile terminals, the mobile terminals being in communication with one or more backend servers. The embodiments of the application disclose uses of such a system for enhancing or streamlining certain types of transaction. In most cases the mobile terminal is a smart phone, but it could also be a smart watch or other smart wearable.
- 15 More specifically, both applications concern a means for a mobile terminal to access goods or services (hereafter “a service”) provided by one or more backend servers. The claims define a “first backend server”, and “second backend servers” which provide the goods or services themselves. GB2108136.9 specifies that either the first or second backend servers can generate coding information and a barcode, corresponding to a service. When a mobile terminal requests a service via the first backend server after scanning and decoding a barcode, the first backend server extracts the relevant service information from the appropriate second backend server and sends it to the mobile terminal. The mobile terminal then communicates directly with the second backend server. GB2108137.7 differs in that (i) *only the first backend server can generate coding information and a barcode*; and (ii) *the service information is determined directly from the coding information by the first backend server* and is provided to the mobile terminal directly.
- 16 In both cases, determining that the barcode was generated according to a preset rule is deemed to “authenticate” the barcode and verify that the mobile terminal may access a related service. There is a further subtle difference between the two applications in that '36.9 specifies that the coding information (as well as the

barcode) complies with the preset rule. '37.7 specifies only that the barcode complies¹. This is consistent with (i) and (ii) above.

- 17 In other words, in both embodiments the backend server acts as a “broker”. In '36.9 the service information is acquired from the second backend server by the broker. In '37.7 the service information is derived from the coding information by the broker. In both cases the service information is provided to the mobile terminal which then communicates directly with the second backend server.
- 18 The embodiment schematized in figure 7 provides a useful depiction of the apparatus and its operation in practice.



- 19 In the Figure, backend server 41 is the “first backend server” and backend servers 42, 43 represent the “second backend servers”. The embodied figure is narrower

¹ Subsequent amendments to the claims (7 June 2022) in fact refer to the *coding information* complying with the preset rule. As stated, my analysis is based upon the claims as they stood at 8 March 2022, but consideration of whether the later amendments affect my decision is made later on.

than both claimed inventions, as the barcode is depicted as a two-dimensional code rather than a barcode in general. The barcode generation is shown as being performed by the first backend server (as claimed in GB2108137.7), whereas the claim of GB2108136.9 allows for it being generated in any of the backend servers. Steps S505, S510 and S515 do not feature in either of the inventions' main claims. Step S535 is where the different processes identified in paragraph 17 above take place.

Assumptions

- 20 Comments in the examination reports dated 27 January 2022 (GB2108136.9) and 21 January 2022 (GB2108137.7) suggest that the search for prior art is complete. I shall proceed on this assumption. As stated above, the only issues I shall formally consider are the requirements for inventive step and patentability.

The Claims

- 21 Both applications comprise two independent claims, to an apparatus and a method. In GB2108136.9 the claims are clearly related to the same inventive concept as they are substantively similar. In GB2108137.7 the method claim 5 specifies that *either* the mobile terminal *or the first backend server* may decode the barcode to acquire coding information. The first backend server decoding the barcode is at odds with the operation depicted in Figure 7 (above). Claim 1 of '37.7 specifies that the mobile terminal performs this task (consistent with Figure 7). At the hearing it was agreed that claims 1 of each application would be considered and for each application the remainder would stand or fall with claim 1, the intention being that they relate to the same inventive concept as that defined in claim 1. The Attorney assured me that if necessary and permissible, the claims of either application would be amended to align with the respective claim 1. I will consider the matter no further and proceed on the basis that the inventions in question are defined by respective claims 1.

- 22 GB2108136.9 claim 1 reads:

A barcode image-based communication apparatus comprising:
a mobile terminal;
a first backend server; and
a plurality of second backend servers, each second backend server configured to provide at least one service to the mobile terminal;
the first backend server and the plurality of second backend servers in network communication with the mobile terminal;
wherein:
the at least one service of each of the plurality of second backend servers has service information corresponding thereto;
one of the first backend server and the plurality of second backend servers is configured to:
generate coding information corresponding to the service information of each service; and,
generate a barcode image from the coding information corresponding to the service information of each at least one service;
wherein the coding information and the barcode image are generated according to a preset coding rule;

the mobile terminal is configured to acquire a barcode image, to decode the acquired barcode image to obtain coding information, and to send the acquired coding information to the first backend server;

the first backend server is configured for parsing the acquired coding information of the acquired barcode image to determine whether the mobile terminal may request a service provided by one of the plurality of second backend servers, the first backend server carrying out such determination by determining whether a coding rule for generating the acquired barcode image is consistent with the preset coding rule; and,

when it is determined that the coding rule for generating the acquired barcode image is consistent with the preset coding rule:

the first backend server extracts service information from the one of the plurality of second backend servers;

the mobile terminal initiates client software;

the client software receives the service information and communicates with the one of the plurality of second backend servers to obtain the service corresponding to the service information to the mobile terminal.

GB2108137.7 claim 1 reads:

A barcode image-based communication apparatus, comprising:

a mobile terminal;

a first backend server; and

a plurality of second backend servers, each second backend server configured to provide at least one service to the mobile terminal;

the first backend server and the plurality of second backend servers in network communication with the mobile terminal;

wherein;

the at least one service of each of the plurality of second backend servers has service information corresponding thereto;

the first backend server is configured to:

generate coding information corresponding to the service information of each service; and,

generate a barcode image from the coding information corresponding to the service information of each at least one service, the barcode image generated according to a preset coding rule;

the mobile terminal is configured to acquire a barcode image, to decode the acquired barcode image to obtain acquired coding information, and to send the acquired coding information to the first backend server;

the first backend server is configured for parsing the acquired coding information of the acquired barcode image to determine whether the mobile terminal may request a service provided by one of the plurality of second backend servers, the first backend server carrying out such determination by determining whether a coding rule for generating the acquired barcode image is consistent with the preset coding rule; and,

when it is determined that the coding rule for generating the acquired barcode image is consistent with the preset coding rule, service information is extracted from the acquired coding information and the mobile terminal is further configured to request one of the plurality of second backend servers to provide the service corresponding to the service information.

The law (excluded matter)

- 23 The Examiner raised an objection under section 1(2) of the Act that the invention is not patentable because it relates to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown below:

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

...

(c) a scheme, rule, or method for performing a mental act, playing a game or doing business, or a program for a computer;

...

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.

- 24 The assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel*², as further interpreted by the Court of Appeal in *Symbian*³. In *Aerotel* the court reviewed the case law on the interpretation of section 1(2) and set out a four-step test to decide whether a claimed invention is patentable:

(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.

- 25 The Court of Appeal in *Symbian* made it clear that the four-step test in *Aerotel* was not intended to be a new departure in domestic law; it was confirmed that the test is consistent with the previous requirement set out in case law that the invention must provide a “technical contribution”. Paragraph 46 of *Aerotel* states that applying the fourth step of the test may not be necessary because the third step should have covered the question of whether the contribution is technical in nature. It was further confirmed in *Symbian* that the question of whether the invention makes a technical contribution can take place at step 3 or 4.

- 26 Lewison J (as he then was) in *AT&T/CVON*⁴ set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. In *HTC/Apple*⁵ the signposts were reformulated slightly in light of the decision in *Gemstar*⁶. The signposts are:

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

² *Aerotel Ltd v Telco Holdings Ltd & Ors Rev 1* [2007] RPC 7

³ *Symbian Ltd v Comptroller General of Patents* [2009] RPC 1

⁴ *AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

⁵ *HTC v Apple* [2013] EWCA Civ 451

⁶ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

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.

Application of the Aerotel approach

Step (1): Properly construe the claim

- 27 There are a number of instances in each claim where it is not clear whether the first or a second backend server is being referenced, or for example where one of the barcode image and coding information appear to have been inadvertently referenced in place of the other (or not referenced at all). I am not going to go into the detail of each of these instances, and for the most part they have been addressed by subsequent amendments (not yet formally incorporated because of the question over the compliance period). Suffice it to say that the description is of limited assistance at best and the figures of marginal additional help. As acknowledged at the hearing, the origin of each application and its divisional status gives rise to a number of linguistic complications which may frustrate the reader. As a way forward, I have construed the claims at face value in conjunction with Figure 7 shown, subject to my comments above. I am confident that this is what the skilled person would do. In that sense I am satisfied that they are clear enough for the purpose of coming to a decision.
- 28 We did have a brief discussion at the hearing regarding some of the features of the claims and support for, for example, the claim that coding information can be generated by either the first backend server or one of the second backend servers. The Attorney suggested basis for this could be found on page 35 within the discussion of figure 15. I agree that this does provide support for that feature, but I will say that I find the necessary references to the description in order to do so, to feel a bit like pick'n'mix. The embodiment of Figure 15 is not the same as that of Figure 7 so is the context appropriate? No formal assessment of support is made here and in any case I do not think these details will influence the eventual outcome of these proceedings.

Step (2): Identify the alleged contribution

- 29 The process of identifying the contribution was summarised in paragraph 43 of *Aerotel/Macrossan* as follows:

... it is an exercise in judgement probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise.

The formulation involves looking at substance not form – which is surely what the legislator intended.

30 In assessing the contribution, it is helpful to consider the state of the art. In this case the closest prior art is the Applicant's own prior application WO 2012/142937 (D1). This document is in Chinese but there is an equivalent European regional phase application published in English as EP2701112 A1 (D1-EP). Although D1-EP was published after the priority date of the current application, it corresponds with the content of D1.

31 The Attorney referred to figure 10 of D1-EP (reproduced below) which illustrates a system using a barcode and a mobile terminal as well as a backend server and a payment server to effect a transaction. The mobile terminal decodes the barcode and parses it to extract commodity information (S920, S925, S930). The mobile terminal then sends a purchase request to the backend server (S935) which creates the order (S940) and requests payment from the payment server (S945).

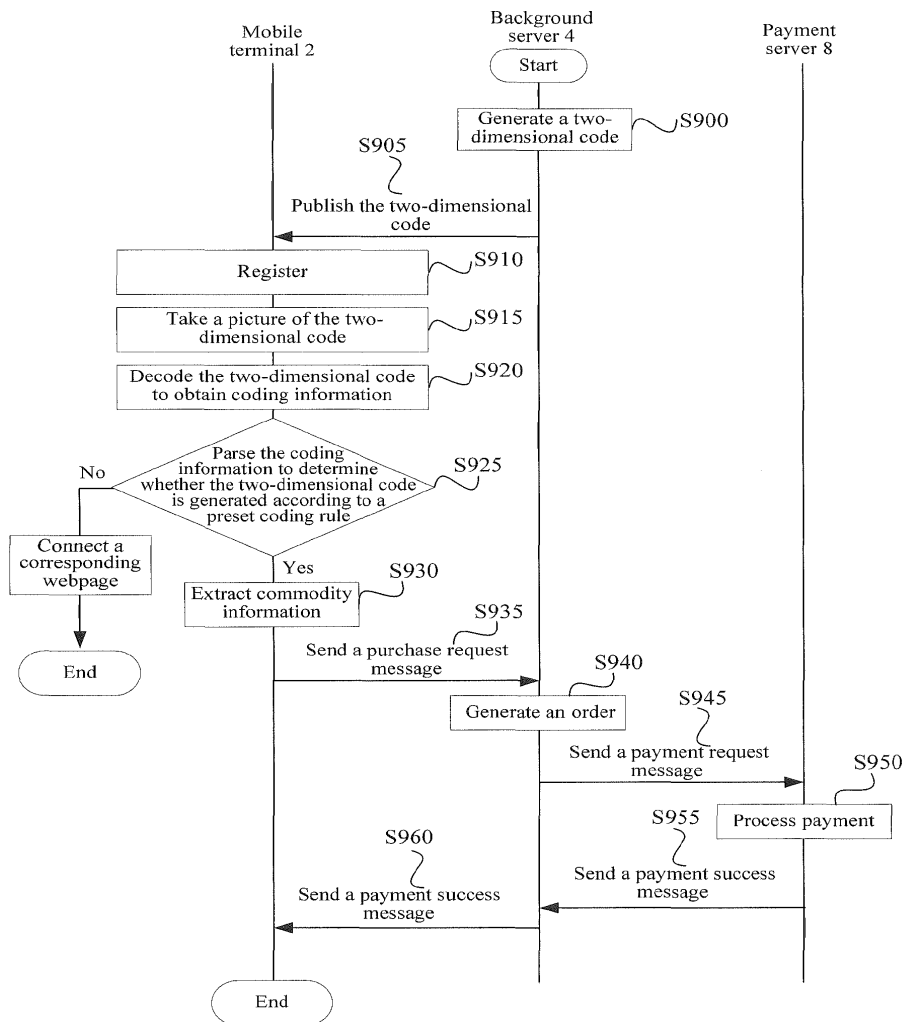


FIG. 10

32 The Attorney highlighted the difference between D1-EP and the claimed invention of GB2108136.9 as being the presence of multiple second backend servers accessed via a first backend server, which parses and verifies the decoded barcode

information, acquires the service information and provides that to the mobile terminal directing it to the appropriate second backend server to fulfil the service request. This means that (i) the verification step is under the control of the first backend server, (ii) via which services from second backend services are accessed.

- 33 The Attorney also contrasted '36.9 with prior art US2006/065733 (D2). The difference he identified was that there was no parsing or thus "verification" step and hence no motivation to implement the functionality of the first backend server, including verification.
- 34 From this I can surmise that the invention of GB2108136.9 has alleged advantages for the security of the parsing and verification steps (over carrying out such steps on the mobile device) and consequently accessing the second backend servers. This is mirrored in the skeleton arguments filed 24 June 2022.
- 35 In other words, what is really important, is the existence of the first backend server which provides the verification and initiation of contact between the mobile terminal and second backend servers.
- 36 At the hearing, and as reflected in the skeleton arguments, the Attorney argued that the contribution of both inventions was similar. In fact, he initially identified the "contribution" for the purposes of inventive step and so expressed two approaches from each of the prior art documents as a starting point, then discussed these in the course of arguing patentability. In summary the identified contribution was:

The ability to access multiple service-providing second backend servers via a single first backend / verification server (from D1)

and the generation of coding information (and hence barcodes) of each service of each server, and the verification of the coding information from the mobile terminal using a preset coding rule (from D2)

and one of the benefits of the single verification server is that it can act for a variety of different enterprises and their servers without each enterprise having to design and roll out their own system, which is more costly and onerous for the users.

- 37 This is a reasonable starting point, but I feel it omits several important features which give rise to alleged advantages, and inadvertently generalises some others, namely:
- (i) The verification step is carried out by the first backend server.
 - (ii) The first backend server extracts service information and provides this to the mobile terminal to enable the mobile terminal to access a respective second backend server directly.

- 38 Consequently, my formulation of the contribution is as follows:

A system for enabling a mobile terminal to access services from multiple backend servers comprises a first and multiple second backend servers. A mobile terminal requests a service via the first backend server after scanning

and decoding a barcode. The first backend server parses the decoded information and if deemed consistent with a coding rule, verifies access, extracts the relevant service information and sends it to the mobile terminal. The mobile terminal then communicates directly with the second backend server to access the service.

- 39 GB2108136.9 specifies that either the first or second backend servers can generate coding information and a barcode, corresponding to a service. The first backend server extracts the relevant service information from the appropriate second backend server. GB2108137.7 differs in that (i) *only the first backend server can generate coding information and a barcode*; and (ii) *the service information is extracted directly from the coding information by the first backend server* and is provided to the mobile terminal directly. Neither of these differences seem to me to affect the alleged advantages of increased security and a single server for making service requests and indeed neither were argued as such by the Attorney. The same contribution, then, would indeed seem to arise in respect of both inventions, although I shall keep in mind the differences in implementation in the following analysis.
- 40 There is one further difference between the claims, which is that '36.9 explicitly refers to client software running on the mobile terminal. Presumably the mobile terminal of '37.7 also runs client software, but its existence is implicit. I am quite confident that this variation is not relevant for the construction of the claims, or the identification of the contribution.

Steps (3) & (4): Does the contribution fall solely within the excluded subject matter; check if the contribution is actually technical.

- 41 The third and fourth steps of the *Aerotel* test involve considering whether the contribution falls solely within excluded categories, and then checking whether the contribution is technical in nature. It is appropriate to consider these two steps together because whether the contribution is technical in nature will have a direct impact on whether it falls solely within excluded matter.
- 42 The contribution is clearly implemented through the use of one or more computer programs. However, the fact that the invention is effected in software does not mean that it should immediately be excluded as a computer program as such. In *Symbian*, the Court of Appeal stated that a computer program may not be excluded if it makes a technical contribution.
- 43 The Attorney argued in the first instance that although the components of the system are known individually, the arrangement and operation of those elements is novel. He drew a comparison with the *Aerotel* case itself where individually known components were made to function in a novel way. The Attorney stated that the claim is accordingly directed to a novel computing system and not to a computer program or a business method as such.
- 44 Let us consider this argument. The suggestion appears to be that because the invention is novel and because it comprises a technical system, then it is not a computer program as such. However, it is not enough that the system is novel if that novelty arises solely due to the way it operates. If the new way of operating is embodied in a computer program then, absent anything technical in the contribution,

the exclusion will apply. I consider that the physical arrangement of the hardware is conventional, even if the specific layout is novel, as the devices defined in the claim join and interact with the network in a conventional manner. In other words, the network technology interconnecting known devices is not new (even at the priority date). In order to decide that the invention is patentable a technical contribution must be identified.

- 45 For example, prior art D1 shows a mobile terminal communicating with a backend server which in turn communicates with a payment server. The difference provided by the present invention lies solely in how the mobile terminal interacts with the (first and second) backend server(s) under the control of a computer program, where the decoding and verification step takes place, and in the provision of second backend servers from which services (including payment transactions) may be requested. Specifically, decoding occurs in the mobile terminal but the parsing of the coding information occurs in the first backend server. This is allegedly more secure because the mobile terminal does not verify the coding rule related to the barcode directly. The presence of further backend servers is considered conventional.
- 46 In order to determine if the contribution implemented by a computer program is technical in nature, I will consider the *AT&T* signposts as argued by the Attorney at the hearing.
- 47 The Attorney has presented no argument in the case of signposts (ii), (iii), or (iv); the so-called *better computer* signposts. I agree that these signposts are not relevant in determining whether or not there is a technical contribution. I consider it self-evident that there is no change at the architectural level of the system or any of its components and the system is not made to *generally* operate in a new way⁷. Nor is it more efficient or effective *as a computer*. In other words, any so-called efficiency gain in performing the parsing at the backend server, instead of the mobile terminal, would be a consequence of selecting the device with the greater capability, not an improvement in any device itself. It is therefore not a technical effect.
- 48 A similar line of reasoning applies to the alleged improved security achieved by parsing the coding information at the backend server. The backend server is under the control of (and maybe be physically located with) the system provider, and is therefore less susceptible to tampering or malicious activity than a mobile terminal. It is an administrative decision to perform the parsing at the server and as such is not technical per se.

First signpost – whether the claimed technical effect has a technical effect on a process which is carried on outside the computer

- 49 In paragraphs 30-31 of the High Court's decision in *Lantana*⁸ (upheld on appeal) the Judge set out that, for the purposes of this signpost, *the computer* is the system in which the invention operates as a whole and not each individual machine. Accordingly, *the computer* is the arrangement of mobile terminals and servers

⁷ As Lewison J effectively noted in paragraph 31 of *AT&T* this signpost "points towards some generally applicable method of operating a computer rather than a way of handling particular types of information".

⁸ *Lantana v Comptroller-General of Patents* [2013] EWHC 2673 (Pat)

connected in what is considered to be a conventional network topology. A technical effect outside this computer may indicate that the invention does not fall within the computer program exclusion.

50 However, on the face of it, any benefits of the invention outside the computer lie in a similarly excluded field, i.e. business (such as reducing the cost and onus upon users as alleged) or administration (selection of hardware with a specific location characteristic or capability). As such they are not *technical effects*.

51 Although the Attorney referred to the components interacting in a new and technical manner, this seems to be based on the “technical” nature of the components as hardware devices. He has not pointed to any changes to the technical specification, capabilities or hence any technical contribution. For this reason, I disagree that the *manner* of interaction is new; it is not, it is technically conventional, even if the data communicated and the program controlling it is novel and defines the invention.

52 The Attorney made a similar case in respect of the original Court of Appeal decision in *Aerotel* and referred to the following passage from the summary of the decision:

H27 (15) When considering the method claim, claim 1, the judge had misunderstood Aerotel’s evidence and thereby misassessed the contribution of the inventor. The inventor was not saying “use existing apparatus for my new method”, instead he was saying “create a new overall combination of apparatus using known types of apparatus and use that combination for my method”. The appeal would be allowed. ([56],[57],[77]).

53 He claimed that the current invention is a similar new arrangement of known components to form a novel system. As acknowledged above, while the specific layout may be new, that alone does not indicate a technical contribution. I consider that the components are interconnected in a network arrangement which uses conventional connections, communications and protocols. It is a conventional arrangement. Novelty is conferred by the software running on the different components which provides for new forms of procedural interaction between the components but does not indicate a technical effect.

54 The Attorney has also referred to a couple of recent Office decisions, *Lookout*⁹ and *Google*¹⁰. From *Lookout*, he referred to the following statement made by the Hearing Officer (at paragraph 36):

“It is important to define what is meant by “the computer” in respect of this signpost. As the examiner points out in their report of 17 June, in Lantana, the Court directed that the “computer” may be a system of computers; a network computer. In so far as the user client computer, the network resource server and the authorisation server are concerned, I agree. Those devices are connected together to control and enable access to the requested resource. The authorising device is separate; deliberately independent even. I am not inclined to consider it as unitary with the “network computer”. The process of interaction between the computer and the authorising device would therefore

⁹ *Lookout Inc.’s Application* BL O/701/21

¹⁰ *Google LLC’s Application* BL O/611/19

be outside the computer and the resultant effect is one of verification and authorisation to access the network resource. I regard access-control / security as a technical field of endeavour and on that basis would regard the effect of the contribution to mean that the first signpost is met.”

- 55 *Lookout’s* application was allowed because the access control feature was *both* outside the computer *and* also technical in character (in relating to access control / security). For the avoidance of doubt, I consider the alleged contribution to security in parsing the coding information at the first backend server to be both *within* the computer network and to *arise from the decision* to use the standard capability/characteristics of the server over a mobile terminal. That capability is itself unchanged and the decision is one based on comparison of standard capability, not an improvement in capability or therefore any technical effect.
- 56 The Attorney also appears to have been trying to draw an analogy between the independent mobile device of *Lookout* and the mobile terminal, first backend server and second backend servers of the instant application and suggested that they are not part of a single computer such that any interaction between them is outside the computer. In support of this, he claimed that the components needed to be split up for the invention to work and therefore should be considered to be separate computers. I do not agree with this analogy. I consider that it is the specific manner of the interaction between the mobile device and the computer of *Lookout* which gives the mobile device its independent quality such that it was found to be outside the computer. The configuration of the system in *Lookout* was such that the device in question was *specifically employed to authorise access to a specific user* and was deliberately independent of the authorised user, such that access control was improved. The independence of the device gave rise to the effect outside the computer, and the contribution to access control lent technical character to the effect. I do not believe *Lookout* was intending to suggest that mobile terminals always fell outside the computer for the purpose of this signpost.
- 57 In relation to *Google* the Attorney stated “*Clearly, the arrangement of the computing devices and their respective functions has a bearing on the contribution. To put it another way, although the individual computing devices are known, if their arrangement and functions contributes to the technical effect of the invention then this must be recognised.*” I do not think there is any doubt that this is an accurate reflection of the law. However, the Attorney has not convinced me that it applies to the current invention. As set out above, I have not been persuaded that the devices and their functions confer technicality upon the contribution. I cannot see any relevant technical effect in the contribution identified above and hence the bearing of the devices on that contribution is not influential.
- 58 The Attorney pressed this point, explaining that the effect arises as a consequence of the interaction between components of a network. He emphasised that the second backend servers need to be separate from the first backend server in order for the advantage (of access, and reduction of cost and onus on users) to be realised. I do not disagree with the requirements which must be implemented for the advantages to arise, but I do disagree that the effect is therefore outside of the computer, or that it is inherently technical. These effects are business or administrative improvements such that they lie in a similarly excluded field and cannot confer technicality on the invention.

Fifth signpost - whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented

- 59 This signpost is intended to consider whether there are any technical problems that have been overcome rather than circumvented. Overcoming a technical problem may indicate a technical effect¹¹.
- 60 The Attorney has not specifically set out what the perceived problem is and has merely claimed that the invention involves a direct solution to the problem rather than a circumvention of it. He said that the invention solves the problems of (i) the vulnerability of the mobile terminal to hacking or malware, and (ii) the costly and onerous nature of providing barcode verification and access across multiple servers. These two problems are addressed by moving the verification step and service information determination into the first backend server. The technical nature allegedly arises from these two features. Although the invention is in the retail/administrative field, he alleged that the problems were nevertheless technical because they related to the interaction of computers in the form of servers and a mobile terminal, and related problems are necessarily technical. I disagree with this argument and the warning of Birss J at paragraph 35 of *Halliburton*¹² seems apt:

The business method cases can be tricky to analyse by just asking whether the invention has a technical effect or makes a technical contribution. The reason is that computer as self-evidently technical in nature. Thus when a business method is implemented on a computer, the patentee has a rich vein of arguments to deploy in seeking to contend that his invention gives rise to a technical effect or makes a technical contribution... That means that some apparently technical effects do not always count. So a computer programmed to be a better computer is patentable (Symbian) but as Fox LJ pointed out in relation to the business method exclusion in Merrill Lynch, the fact that the method of doing business may be an improvement on previous methods is immaterial because the business method exclusion is generic.

- 61 The problems addressed by both inventions are business problems, albeit the solution is implemented on a computer. The fact that it is implemented on a computer is not itself sufficient to provide a technical contribution.
- 62 Since I can find no technical effect in the contribution of claim 1 of GB2108136.9, the invention is considered to be nothing more than a method for doing business and a program for a computer as such. Accordingly, it falls within the exclusions of section 1(2)(c) of the Act and is excluded from patentability. The same applies by extension to GB2108137.7.

The law (inventive step)

- 63 As I have found that both applications are excluded from patentability under section 1(2) I need not consider the question of whether or not they provide the required

¹¹ See EPO Technical Board of Appeal Decision T0258/03 (Auction method/Hitachi) on which signpost (v) is based.

¹² *Halliburton Energy Services inc. v Comptroller General of Patents* [2011] EWHC 2508

inventive step. Nonetheless I was addressed on this point at the hearing and in the skeleton arguments so I shall consider it briefly.

64 I should also say that the tests for technical contribution and inventive step are distinct¹³, and yet have been – if not conflated – closely linked by both the Examiner and the Attorney. This may be for good reason; expediency in the face of evolving claims and the discovery of new prior art, and addressing each others' points. Nonetheless it means that I must now come to a decision on the question of inventive step, but on the basis of a “difference” over the prior art which was also put forward as the “contribution” under *Aerotel*. Having been detailed in my analysis of patentability, I will now be more general in order to avoid repetition as the argument was much the same.

65 The Examiner raised an objection under sections 1(1)(b) and (3) of the Act that the invention is not patentable because it relates to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown below:

Section 1(1) states

A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say

...

(b) it involves an inventive step;

...

66 While section 3 states:

An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

67 In order to assess the inventive step objectively the approach taken is that set out in *Windsurfing International v Tabur Marine (Great Britain) Ltd*¹⁴ and subsequently modified by *Jacob LJ in Pozzoli SPA v BDMO SA* [2007]¹⁵;

(1) (a) Identify the notional “person skilled in the art”

(1) (b) Identify the relevant common general knowledge of that person;

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;

(3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

¹³ Manual of Patent Practice at section 1.17.2

¹⁴ *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59

¹⁵ *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

Identify the notional “person skilled in the art”

68 At the hearing and in the skeleton arguments, the Attorney did not dwell on steps 1(a) and (b) above. Again, the approach taken was the same for each application as the inventive concepts, as with the identified contribution, are so similar. In their examination report of 8 April 2022 the Examiner set out the skilled person as one engaged with exercising the utilisation of barcodes to provide backend services to a mobile device. The Attorney has not provided a counter and this seems reasonable to me.

Identify the relevant common general knowledge of that person

69 The relevant common general knowledge is set out by the Examiner as knowledge of software and servers. This is a fair starting point but should extend to networks and encoded access to networked devices (such as servers, and implemented by software). Barcodes as a form of encoded representation would also fall within the common general knowledge. The Attorney has not provided a counter assessment.

Identify the inventive concept of the claim in question or if that cannot readily be done, construe it:

70 Setting out the inventive concept, the Examiner asserted it to be “providing services to a user terminal based on a barcode, whereby a first backend server parses the information and a second backend server provides the service”.

71 The Attorney has construed the claim in more detail and sets out the following in the skeleton arguments provided prior to this hearing on 24 June 2022:

A system having a mobile terminal, a first backend server and multiple second backend servers each offering a service,

one of the backend servers generates unique coding information and a corresponding barcode for each service;

the mobile terminal scans and decodes the barcode, sending the coding information to the first backend server;

the first backend server verifies the coding information by determining whether it is consistent with a preset coding rule;

if so, the first backend server extracts service information and sends it to the mobile terminal, which initiates software to obtain the service.

72 Despite the difference in wording I think, in practice, the two constructions are very similar, with the Attorney’s being more explicit about where the necessary steps take place and the requirement for verification. In this context I will use the Attorney’s contribution for the following discussion.

Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed

73 I am going to deal with this step of the test quite briefly. When considering the contribution above, as I mentioned, the starting point for the Attorney’s position was the cited prior art. As above, he identified differences and consequent alleged advantages arising from each of these different starting points, which I acknowledged in my formulation of the contribution. Those differences set out above (which are common to both applications) are several and convey distinct advantages over the prior art. Furthermore, each application is characterised by yet further differences in their specific implementation. These differences are all identified in my discussion prior to identifying the contribution above and I will not repeat them here.

Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

74 The Examiner’s opinion was that the differences he identified were arbitrary and did not provide a contribution to human knowledge which was of any substance.

75 The Attorney’s argument may be summarised as that starting from D2, the skilled person would not, despite having common general knowledge, arrive at the present invention as there would be no motivation. With respect to D1, there are substantial non-obvious benefits from providing a common first backend server which performs verification.

76 I agree with the Attorney. The differences are ones of substance; based on the prior art and common general knowledge, the skilled person would not attempt to derive the presently claimed systems, or if they did, would not find the solutions defined by the claims to be obvious. Whilst they may not be indicative of “technical” problems to solve, or a technical contribution in the sense required by case law, they are nonetheless cumulatively non-obvious differences and benefits – in my view – given the starting point for assessment. In so finding I am conscious of the priority date of the applications.

77 On the basis of the evidence before me, and noting that the Examiner has deferred full consideration of inventive step in the latest Examination Report on each respective application, I am content that the claimed inventions in each application do comply with sections 1(1)(b) and (3) of the Act.

Conclusion

78 I have fully considered the arguments before me in respect of both applications GB2108136.9 and GB2108137.7. For the most part, consistent with the approach taken in the skeleton arguments and at the hearing, I have been able to consider both applications together. Where material differences arise I have identified them and considered whether they are relevant to the issue at hand. For the avoidance of doubt, the consideration and exclusion under section 1(2) applies equally to both applications. The differences in the main claims of each do not influence the identified contribution (as discussed) or consequently the arguments in its favour or my finding on the matter.

- 79 I have also considered the amendments made to the claims since the expiry of the compliance period as it was at the time the hearing was originally requested, namely 8 March 2022. I must express my sincere thanks to the Applicant and the Attorney for addressing the Examiner's responses received after the compliance period expired, albeit they were not accepted at the time and incorporated. The amendments address some issues of clarity and the accompanying arguments address points of support and added matter. Whilst I have not formally considered these issues in their own right, I have commented on them in this decision where relevant and I can confirm that the amendments designed to address these additional issues do not materially change my construction of the claims, my analysis of the issues for decision, or my finding. In other words, had I based this decision on the latest claims the outcome would have been the same.
- 80 Since the invention fails to comply with section 1(2)(c) of the Act because it is a method for doing business and a program for a computer as such, the application is refused under section 18 of the Act.

Appeal

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

BEN BUCHANAN

Deputy Director, acting for the Comptroller