

The invention

- 5 The application is concerned with methods of assigning a priority value to actual or potential “incidents” or faults on a communications network, such as a mobile communications network. The description suggests a network operator could use such a priority value to prioritise deployment of maintenance resources, such as maintenance teams.
- 6 In the embodiment of Figure 2, described under the heading “Prioritising network faults using subjective and objective data”, three inputs are provided to the method. These are: i) incident data relating to “trouble tickets” (i.e. known incidents or faults within the network, such as network derived indications of network issues or planned outages), received and assigned a geographic tag at step 210; ii) objective data, 120, 122, such as measurements taken by users’ mobile devices to characterise the quality of service experienced, received at step 215; and iii) subjective data 124, such as status checks submitted by users on an app, received at step 220. Objective and subjective data are matched based on device or area (step 225) and at step 250 incidents (from list 210) are “assigned a priority based on the subjective data 124”. This prioritisation is then verified against objective data (step 260) and modified accordingly (270, 280).

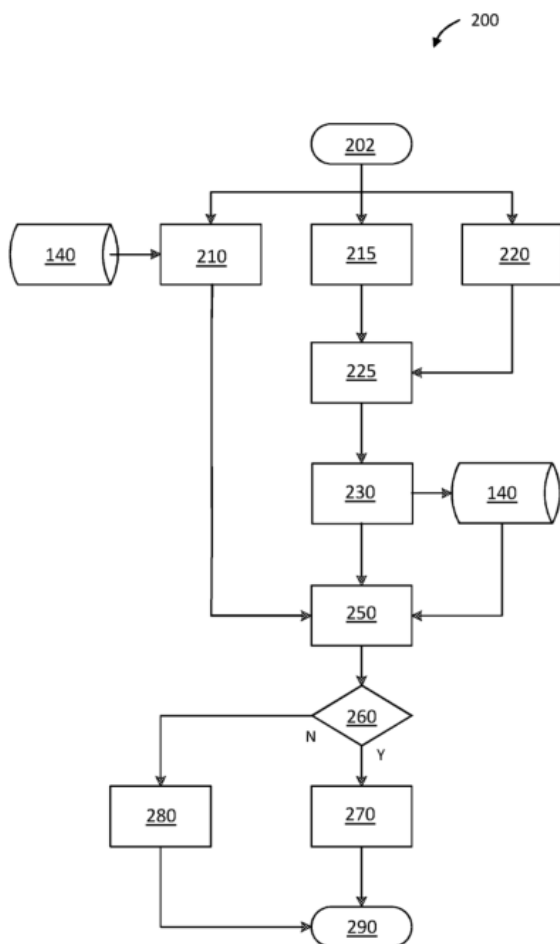


Figure 2

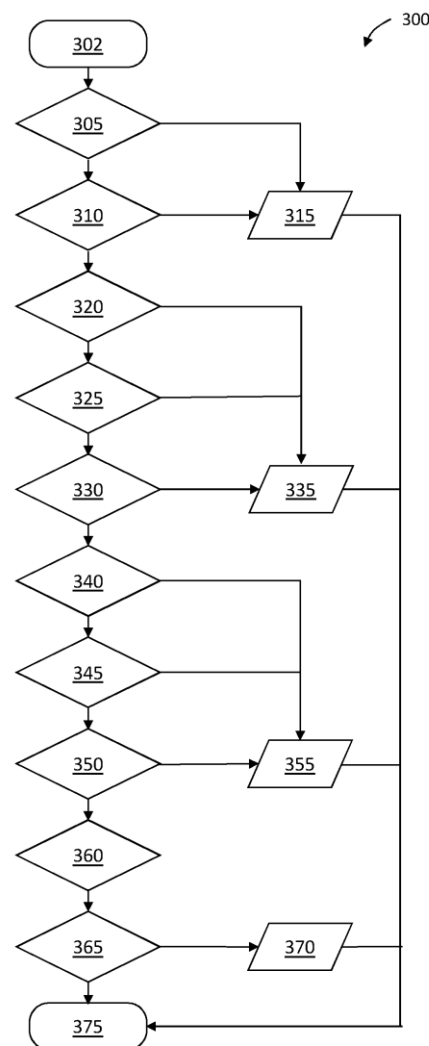


Figure 3

- 7 Figure 3 is said to show “an example of an algorithm 300 that could be used to assign a priority to network faults based on subjective data”. In my view, this is an example of an algorithm that could be used at step 250 of Figure 2. At step 305 “a test is performed to ascertain if a given network location... has a known multi-site failure (MSF)”. If an MSF is known at the network location, then the incident is given the highest priority (315). Otherwise, in step 310 the subjective data is interrogated to determine whether the number of status checks exceeds a first threshold: if it does, the highest priority is set (315), and if not, the flowchart proceeds to consider further thresholds (320, 325, 330, 340, 345) and other criteria (325, 330, 345, 350, 360, 365) and sets a lower priority 335, 355, 370 accordingly.

The claims

- 8 The current claims were filed on 23 September 2024. They consist of independent method claim 1; dependent method claims 2-22; apparatus claim 23, which includes a processor configured to carry out the method of any of claims 1 to 22; and claim 24 to a computer readable storage medium for carrying out the method of any of claims 1 to 22. Independent claims 23 and 24 will stand or fall with claim 1. Claim 1 reads as follows:

1. A computer-implemented method of determining a priority of an incident in a communications network, wherein the determined priority is for repair and/or maintenance of the communications network, the method comprising:
 - receiving an indication of the incident in the communications network;
 - determining if the incident relates to a known failure at a location on the communications network; wherein
 - if the incident relates to a known outage on the communications network, assigning a first priority to the incident; or
 - if the incident does not relate to a known outage on the communications network, the method further comprises receiving a set of subjective data relating to user perception of performance of the communications network and determining whether the set of subjective data meets a first threshold or a second threshold, wherein the first threshold is higher than the second threshold; wherein:
 - if the set of subjective data meets the first threshold, assigning the first priority to the incident; and
 - if the set of subjective data meets the second threshold, assigning a second priority to the incident, wherein the first priority is higher than the second priority.

The law – section 1(2)

- 9 Section 1(2) of the Act defines certain categories of subject-matter which are not considered to be inventions. These categories are often referred to as ‘excluded subject-matter’. The relevant provisions of this section of the Act are shown below:

1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the Act, that is to say, anything which consists of...

(c) ...a scheme, rule or method for...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.

- 10 The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian*². *Symbian* arose under the computer program exclusion, but the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the approach previously followed by the Court of Appeal in *Aerotel/Macrossan*³. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*⁴ which rested on whether the contribution was technical; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case.
- 11 Subject to the clarification provided by *Symbian*, it is therefore appropriate to proceed on the basis of the four-step approach. In *Emotional Perception*⁵, the Court of Appeal expressed (at [31]) that the four steps of the *Aerotel* test are:
- (1) Properly construe the claim;
 - (2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution);
 - (3) Ask whether it falls solely within the excluded matter;
 - (4) If the third step has not covered it, check whether the actual or alleged contribution is actually technical.
- 12 Lewison J (as he then was) in *AT&T/CVON*⁶ set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. In *HTC v Apple*⁷ the signposts were reformulated slightly in light of the decision in *Gemstar*⁸. The revised signposts 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;

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

³ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

⁴ *Merrill Lynch's Application* [1989] RPC 561

⁵ *Comptroller-General of Patents, Designs and Trade Marks v Emotional Perception AI Ltd* [2024] EWCA Civ 825

⁶ *AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

⁷ *HTC Europe Co Ltd v Apple Inc* [2013] RPC 30

⁸ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

- iv) whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer; and
- v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

13 On the exclusion of methods of doing business, it is worth noting the words of HHJ Birss QC (as he then was) in *Halliburton*⁹ which is reproduced by Floyd J (as he then was) in *Protecting Kids the World Over*¹⁰:

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 computers are 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. For example the computer is said to be a faster, more efficient computerized book keeper than before and surely, says the patentee, that is a technical effect or technical advance. And so it is, in a way, but the law has resolutely sought to hold the line at excluding such things from patents.

- 14 Manual of Patent Practice (MoPP) explains the IPO's practice under the Act and makes helpful references to relevant case law. The Manual can be viewed online at the IPO website: <https://www.gov.uk/guidance/manual-of-patent-practice-mopp>¹¹.
- 15 There is no dispute concerning the relevant law and its application to the facts of this case.

Application of the Aerotel test

Step (1): construe the claim

- 16 The introductory part of claim 1 stipulates that the claimed method is for “determining a priority of an incident in a communications network, wherein the determined priority is for repair and/or maintenance of the communications network”. Here, I will construe “for repair and/or maintenance” as “suitable for repair and/or maintenance”. No repair or maintenance steps are listed in the claim, The invention relates to the determination of priority, not to network repair or maintenance.
- 17 The first method step claimed in claim 1 is “receiving an indication of the incident in the communications network”. Lines 12-14 of page 24 of the description are relevant to this step:

The algorithm 300 receives from one or more databases (such as database 140) information about one or more of: network change requests and/or planned maintenance operations; and ‘trouble tickets’ and/or known incidents on the network.

⁹ *Halliburton Energy Services Inc's Applications* [2011] EWHC 2508 (Pat) [35]

¹⁰ *Protecting Kids the World Over (PKTWO) Ltd's Patent Application* [2011] EWHC 2720 (Pat) [14]

¹¹ See MoPP, Section 1, paragraphs 1.01-1.47 which sets out the office practice in relation to Section 1 of the Act. Paragraphs 1.31 – 1.39.4 refer specifically to section 1(2)(c).

18 Furthermore, when discussing the embodiment of Figure 2, lines 24-29 of page 18 of the description define what is meant by “trouble tickets”:

‘Trouble tickets’ (which may also be referred to as ‘incidents’) are known incidents or issues on the network and may include alarms, scheduled maintenance tasks or outages, scheduled upgrades to the network equipment, or sites, ‘clusters’ of user reports of problems (such as clusters of status check requests undertaken by users of the network), network measurement-derived indications of a network problem or any other known (confirmed) or possible network issue of which the network operator is aware.

19 This definition of “trouble tickets” / incidents is very broad and seems to include each of the other types of issues listed at lines 12-14 of page 24 such as planned maintenance operations. However, line 30 of page 18 confirms that known incidents may be “real or yet to be confirmed” and line 35 of page 18 suggests that a “known (planned) outage” does not amount to an “incident”, although this latter point would appear to be inconsistent with the above definition of trouble tickets.

20 Based on the above analysis of the description, I will construe the first method step of claim 1 (the fourth line of the claim) as receiving an indication of an incident or potential incident on the communications network, which could take the form of an actual outage, a detected fault short of an outage, or a mere planned outage.

21 From the description it is apparent that lines 5-8 of claim 1, as reproduced above, are intended to cover step 305 of Figure 3. This step involves determining whether a given network location is suffering from a known multi-site failure (MSF). According to the description, a fault in a radio network controller connected to multiple base stations would be regarded as an MSF. Claim 1 does not refer to an MSF, but instead refers more broadly to a “known failure”. In this respect, claim 1 is simply too broad; any incident for which an indication is given could, tautologically, be regarded as known. Consequently, the decision tree would always pass the test at step 305, and there would be no need for the remaining steps in the tree, or the remainder of claim 1 for that matter. I will therefore construe “known failure”, at line 4 of claim 1, as relating to a communications network failure of a predetermined type. Such a construction covers an MSF but is not restricted solely to an MSF. At line 9 of claim 1 the term “known outage” is used, and I am interpreting this to be the same as the “known failure”.

22 On lines 10-11 of the claim “receiving a set of subjective data relating to user perception of performance of the communications network” is construed as receiving subjective data which has an association to the indicated incident or potential incident. This is based on the embodiments (page 19, line 20 – page 20, line 19) and clarifies the scope of the subjective data that is subsequently compared to a threshold in the claim.

23 The remainder of claim 1 is straightforward to interpret. In summary, I construe claim 1 as:

A method of assigning a priority value to an incident or potential incident on a communications network, the priority value being suitable for use in the repair or maintenance of the communications network, the method comprising:

receiving an indication of the incident or potential incident;

if the incident / potential incident is of a particular predetermined type then assigning a first priority value to the incident or potential incident;

if the incident / potential incident is not of the predetermined type then:

determining whether subjective data which has an association with the incident or potential incident meets a first threshold, wherein the subjective data relates to user perception of performance of the communications network;

if the subjective data meets the first threshold, then assigning the first priority value to the incident or potential incident;

if the subjective data does not meet the first threshold but does meet a second threshold, lower than the first threshold, then assigning a second priority value, lower than the first priority value, to the incident or potential incident.

Step (2): identifying the actual (or alleged) contribution

- 24 The second step of the *Aerotel* test is to identify the contribution of the claim. The examiner considers the contribution to be:

Prioritising fault repair or maintenance of an incident in a communications network by considering whether the incident is known in addition to further using subjective data relating to user perception of performance of the network, wherein the incident is assigned a higher priority depending on whether the received subjective data exceeds 'thresholds values' (different amounts of received subjective data - i.e. from more users).

The effect of the invention is that network operators are able to prioritise the repair or maintenance toward incidents that are having the greatest (perceived) impact on users.

- 25 However, the contribution identified in the attorney's letter dated 23 September 2024 is an

algorithm (which provides) a more robust communications network by identifying and fixing faults on the network in a structured and efficient manner.

- 26 As I have already indicated in the claim construction section above, I do not consider claim 1 to relate to fixing faults in a communications network. Furthermore, I cannot agree that the invention more readily diagnoses faults or incidents. The method of claim 1 receives, as an input, an indication of a fault / incident; it does not itself include any steps for identifying or diagnosing faults / incidents. Rather, data is collated and processed to assign a priority value to a previously determined fault / incident based on the perceived impact of the fault on users, as indicated by subjective data. The priority value may then be provided to a network operator to allow them to prioritise their engineering resources. The contribution lies solely in a specific method of determining the priority value.

- 27 Indicating faults in a communications network, for example using alarms, and assigning priority to faults based on the type of fault is entirely conventional. The contribution therefore must lie in the way subjective data is used to determine a priority value. Based on this reasoning, and my construction of claim 1, I consider the contribution to be:

Assigning a priority value (suitable for use in allocating resources to maintain or repair a communications network) to an incident or potential incident on the network, the priority value being determined based on a comparison of subjective data (relating to user perception of the performance of the network) with a plurality of thresholds; wherein when the subjective data meets the highest of the thresholds, the priority value assigned to the incident / potential incident matches a priority value assigned to other incidents of a particular predetermined type; but otherwise a lower priority value is assigned to the incident / potential incident.

Step (3): ask whether it falls solely within the excluded subject matter

- 28 The examiner has objected to the invention as relating to a method for doing business and a program for a computer as such. I will deal with each of these categories in turn.

Method of doing business

- 29 As indicated above, I consider the contribution of the invention to lie in assigning priority values to incidents or faults on a network. A network operator may use the priority values to prioritise engineering resources (such as maintenance teams) to those incidents which are perceived to have the greatest impact on customers, as determined by a comparison of the subjective data with thresholds. This would enable a network operator to allocate limited engineering resources in a way which optimises customer satisfaction levels. In my view, the contribution does relate to a method of doing business. To assess whether the invention lies solely in the excluded categories I will now go on to ask, “what more is the ... invention than a method of doing business?”¹².

Program for a computer

- 30 Claim 1 relates to a program for a computer. This much is clear from the opening words of claim 1 (“a computer-implemented method”) and from the description of Figure 3 as an “algorithm”. However, what I need to decide is whether the contribution is a computer program as such. I will apply the *AT&T/CVON* signposts to help me decide this matter.
- 31 In relation to the first signpost, I note that the contribution resides entirely within a computer. The contribution is to prioritisation of faults for repair, and does not provide a technical improvement to the communications network, or make it more reliable. The invention merely determines priority values, which are available for use by a network operator. In any case, the repair would not be made easier or more efficient by any technical advance described in this application. The computer-

¹² *Lenovo (Singapore) PTE Ltd v Comptroller General of Patents* [2020] EWHC 1706 (Pat) [35]

implemented method of claim 1 does not produce a technical effect outside of the computer, and so the first signpost does not indicate a technical contribution.

- 32 The invention clearly operates at the application level rather than at the architectural level of a computer, so signposts two, three and four are not met.
- 33 Turning now to signpost five, the problem addressed by the invention is how to prioritise the use of limited maintenance resources. As discussed above, this is a business problem rather than a technical problem, so signpost five does not indicate a technical contribution. Claims 1, 23 and 24 relate to a computer program as such.

Step (4): if the third step has not covered it, check whether the actual or alleged contribution is actually technical

- 34 As discussed above when considering step 2 of the *Aerotel* test, I do not accept the attorney's most recent submission that the invention provides the technical contribution of a more robust communications network. Earlier communications from the attorney argued that the invention improves energy efficiency or data transmissions rates. However, I cannot see how the invention makes such technical contributions either. As noted above, the signposts do not indicate to me that the contribution is technical. It is acknowledged that signposts are not prescriptive, but I have considered the application carefully and I cannot see any basis for a technical contribution.
- 35 Office decision *Spatialbuzz Limited* [BL O/0491/24](#) also concerned determining a priority indication to aid fault investigation and remediation on a cellular network. However, the priority indication was determined based on received user queries for an area of the network and user population data for that area. I am reassured that, in BL O/0491/24, the hearing officer decided that the claimed invention was excluded under Section 1(2) as both a business method and a program for a computer. This is consistent with my own reasoning in this decision.

Conclusion

- 36 I have decided that the invention defined in claims 1, 23 and 24 falls solely within matter excluded under section 1(2) as a program for a computer and a method for doing business as such. Having reviewed the application, I do not consider that any saving amendment is possible. I therefore refuse this application under Section 18(3). There is no need to consider whether the invention is novel or provides an inventive step.

Appeal

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

DR ANDREW ROSE

Patent Examination Group Head