



## PATENTS ACT 1977

APPLICANT	Gaiasoft IP Limited
ISSUE	The Patents Act 1977: whether patent application GB1213491.2 complies with section 1(2) of the Act
HEARING OFFICER	Dr L Cullen

---

## DECISION

### Introduction

- 1 This decision concerns patent application GB1213491.2 entitled “*Content delivery system*” in the name of Gaiasoft IP Limited (hereafter Gaiasoft). The matters to be decided are whether the invention as claimed at the date of the hearing relates, firstly, to matter not present in the application as originally filed and, secondly, to matter excluded from patentability as defined in Section 1(2) of the Patents Act 1977 (hereafter the Act).
- 2 The application was filed on 30 July 2012, with no earlier priority date. The application was subject to search under section 17(5)(a) of the Act and was initially published as GB2506575A on 9 April 2014. In his first official examination report under Section 18(3) of the Act, dated 20 June 2018, the examiner considered that the invention as claimed was very broad in scope, lacked novelty and inventive step and that it related to matter excluded under Section 1(2) of the Act. Deferring other matters until the latter objection was dealt with, the examiner found that the claimed invention relates to a program for a computer as such and to a method for doing business. Despite two further rounds of correspondence involving amendment and argument, and a change in representation, the applicant has not been able to overcome this objection.
- 3 The applicant requested a hearing in their letter dated 1 July 2019. In relation to the set of claims, dated 1 July 2019, provided by the applicant with their request for a hearing, the examiner maintained his objection under section 1(2), but also considered that these amended claims related to matter that was not in the application as filed.
- 4 The matter came before me at an oral hearing on 1 October 2019. Present at the hearing were Mr Mourel Fourman, CEO of Gaiasoft, and Mr Kevin Parnham of Avidity IP acting for the applicant; assistant to the hearing officer Eleanor Wade; the Examiner dealing with this application, Mr Peter Doenhoff, and an observer for training purposes.

- 5 Following the hearing, the applicant subsequently filed a set of amended claims, dated 15 October 2019. I have taken account of this set of amended claims in my decision below.

## **The Invention**

- 6 The invention relates to a system for delivering content appropriate to participants in a venue, by creating a dynamic aggregate profile of participants present in the venue, the dynamic aggregate profile being constantly updated in response to changes in the participant population and being used to determine appropriate content to deliver. The system includes an interactive platform which the participants engage with to receive relevant content delivered to display devices located close to the participants or those held by the participants themselves, such as smart phones. The participants may be those who provide a service or business within the venue and want to deliver relevant content to people within the venue to encourage use or engagement with their services. Participants also include those who visit the venue to access one, some or all of the service(s) or business(es), which may include a shopping mall, a concert venue. The content delivered may be media/advertising or may be an output to a control system of the venue. The content being delivered is dependent on where the participant is in the space and the purpose of this space (selling food, drink, clothes, spectating at a sports event) and the numbers of people entering and leaving the space who will each have an individual profile.
- 7 The system is for use in a venue space with a geographic boundary. The boundary encloses a space where the content is to be delivered. It may be a physical boundary, such as the outer walls of a shopping centre, a stadium where various live events (music, sport) take place, or a shop, restaurant or café within a shopping centre; or it may be a virtual boundary such as a geofence. This venue space provides an interactive platform for people within it who are using relevant mobile computing devices.
- 8 Participants move in and out of the venue space and participate via their mobile computing devices which check them in to the space. Checking in may be simply through physical movement into the space or may require the participant to actively register or engage with the interactive platform.
- 9 Aggregate characterisation profiles of each participant are created algorithmically from information sourced from the mobile computing devices of the participants in the space. Some information may be actively provided by the participants, e.g., by checking-in; but much may not and has to be derived indirectly, for example, by comparing the profiles of participants that are in close proximity; by following the movement of the mobile computing devices through the venue. This allows predictions or estimates to be made to fill in gaps in the information available for individual participants. The aggregate characterisation profiles are constantly updated as participants check-in and check-out of the platform or as they pass through the boundary, and as they interact with it, changing to reflect the mix of participants at any time.

- 10 Content that is best suited to the needs and interests of the selected aggregate characterisation profile can then be identified and delivered. This allows the content delivered to better reflect the needs and interests of the participants within the venue and the venue itself, and to change appropriately as the mix of people within the venue changes.
- 11 The delivery of content includes media/advertising, such as displaying healthy meal offers in a café but could also include an output to a control system of the venue, for example, to adjust the temperature through control of air conditioning, because of increased numbers and activity of participants in the venue.

### **The Claims**

- 12 At the date of the hearing, the claims on file (dated 1 July 2019) comprised a single independent claim, claim 1, which reads as follows:

*A content delivery server apparatus for a venue comprising:*

*a processing resource;*

*a communications interface with a current known but variable capacity such as computational capacity and/or communication speed within the venue; wherein*

*the processing resource is configured to support an interactive platform to allow a plurality of users to participate through use of the interactive platform in order to receive, when in use, content including at least some information identifying content communicated from the plurality of users;*

*the platform arranged to receive a plurality of participant identifying information associated with each of the plurality of users, respectively participating through interaction with the interactive platform;*

*the processing resource is arranged to obtain a plurality of profile information relating to the plurality of identified participants, respectively, the profile information being different for a first identified participant and for a second identified participant with at least some profile information consistent for the identified participants; and*

*the processing resource is arranged to use the plurality of participant identifying information or the plurality of profile information to generate a plurality of characterisation profiles of the plurality of identified participants,*

*each characterisation profile being an aggregation of the profile information, the characterisation profile determined by taking the consistent profile information between the profile information for the first identified participant and the profile information for the second identified participant whereby the process resource predicts any profile information missing from either the profile information for the first identified participant and/or the second identified participant for incorporation into the respective characterisation*

*profile and the characterisation profile is the aggregation of all the profile information including predicted profile information, the apparatus provides a relevance quotient dependent upon the proportion of predicted profile information in the characterisation profile, the individual participants at least not fully determinable from the characterisation profile, each characterisation profile having a known requirement upon the communications interface for their respective participant identifying information and/or content, one of the plurality of the characterisation profile chosen by the processor resource to allow participation of the plurality of users based upon the relevance quotient to a relevance request by one or more of the users for participation with the interactive platform via the communications interface whereby all the plurality of characterisation profiles are considered such that the chosen characterisation profiles is that which has the nearest match between the relevance quotient to the relevance request and to the known requirement of the chosen characterisation profile and within a current known capability of the communications interface for the content including the information identifying content.*

### **The Issues to be decided**

- 13 The issues to be decided at the hearing were:
- (i) does the invention as claimed at the date of the hearing include matter which was not present in the application at the filing date?
  - (ii) does the invention as claimed relate to matter excluded under Section 1(2) of the Act?
- 14 The search carried out on the application as filed was curtailed in view of the breadth of the original claims and number of relevant citations found. Accordingly, if I find that the invention as claimed does not relate to matter excluded under section 1(2), I will remit the application for completion of the search and examination procedure.

### **Added matter – section 76(2)**

#### *The Relevant Law*

- 15 Section 76(2) of the Act makes clear that any amendment to an application for a patent must not result in a disclosure that goes beyond that in the application as filed, i.e. it should not add matter to a patent application. This section of the Act reads as follows:

*“No amendment of an application for a patent shall be allowed under section 15A(6), 18(3) or 19(1) if it results in the application disclosing matter extending beyond that disclosed in the application as filed.”*

In this instance we are concerned with amendment of the application for a patent made under Section 18(3) of the Act.

- 16 The case law setting out the correct approach to use in assessing added matter is *Bonzel and Schneider (Europe) AG v Intervention Ltd* [1991] RPC 553 (“*Bonzel*”), where Aldous J (as he then was) stated:

*“The decision as to whether there was an extension of disclosure must be made on a comparison of the two documents read through the eyes of a skilled addressee. The task of the Court is threefold:*

*(a) To ascertain through the eyes of the skilled addressee what is disclosed, both explicitly and implicitly in the application.*

*(b) To do the same in respect of the patent as granted [or, in this case, the application as amended].*

*(c) To compare the two disclosures and decide whether any subject matter relevant to the invention has been added whether by deletion or addition. The comparison is strict in the sense that subject matter will be added unless such matter is clearly and unambiguously disclosed in the application either explicitly or implicitly.”*

- 17 Also useful is a passage from *Richardson-Vicks Inc.’s Patent* [1995] RPC 568 (“*Richardson*”) where Jacob J (as he then was) referring to the test in *Bonzel*, stated:

*“I think the test of added matter is whether a skilled man would, upon looking at the amended specification, learn anything about the invention which he could not learn from the unamended specification.”*

### *Analysis*

- 18 In present claim 1, the additional subject matter identified by the examiner is underlined below:

*A content delivery server apparatus for a venue comprising:*

*a processing resource;*

*a communications interface with a current known but variable capacity such as computational capacity and/or communication speed within the venue; wherein*

*the processing resource is configured to support an interactive platform to allow a plurality of users to participate through use of the interactive platform in order to receive, when in use, content including at least some information identifying content communicated from the plurality of users;*

*the platform arranged to receive a plurality of participant identifying information associated with each of the plurality of users, respectively participating through interaction with the interactive platform;*

*the processing resource is arranged to obtain a plurality of profile information relating to the plurality of identified participants, respectively, the profile information being different for a first identified participant and for a*

second identified participant with at least some profile information consistent for the identified participants; and

*the processing resource is arranged to use the plurality of participant identifying information or the plurality of profile information to generate a plurality of characterisation profiles of the plurality of identified participants,*

*each characterisation profile being an aggregation of the profile information, the characterisation profile determined by taking the consistent profile information between the profile information for the first identified participant and the profile information for the second identified participant whereby the process resource predicts any profile information missing from either the profile information for the first identified participant and/or the second identified participant for incorporation into the respective characterisation profile and the characterisation profile is the aggregation of all the profile information including predicted profile information, the apparatus provides a relevance quotient dependent upon the proportion of predicted profile information in the characterisation profile, the individual participants at least not fully determinable from the characterisation profile, each characterisation profile having a known requirement upon the communications interface for their respective participant identifying information and/or content, one of the plurality of the characterisation profile chosen by the processor resource to allow participation of the plurality of users based upon the relevance quotient to a relevance request by one or more of the users for participation with the interactive platform via the communications interface whereby all the plurality of characterisation profiles are considered such that the chosen characterisation profiles is that which has the nearest match between the relevance quotient to the relevance request and to the known requirement of the chosen characterisation profile and within a current known capability of the communications interface for the content including the information identifying content.*

- 19 The examiner notes in the official examination report dated 16 July 2019 outlining matters to be dealt with at the hearing: *“Almost the entire final paragraph of claim 1 (...) would appear to define steps of a method that are not disclosed in the specification as filed.”* I have underlined the relevant text in final paragraph of claim 1 above.
- 20 I am satisfied that the common general knowledge of the skilled person would include an understanding that computer systems and networks have variable capacity, dependent on a range of changing factors, but that the capacity is known at any given time. This would be implicit in the use of any conventional communications interface and does not teach the skilled person anything new.
- 21 Similarly, the requirement that the profile information be different for a first identified participant and for a second identified participant, with at least some profile information for one identified participant different from another participant and some profile information consistent for the identified participants is simply a statement of what would implicitly be true for pairs of participants used in the topic modelling methods

discussed in the application. This involves the extrapolation of information known for some participants onto the profiles of other participants based on known similarities.

- 22 Therefore having considered the application as a whole, alongside the common general knowledge and expectations of the skilled person, I accept that the known but variable capacity of the communications interface and the profile information being different for a first identified participant and for a second identified participant with at least some profile information for one identified participant different from another participant and some profile information consistent for the identified participants would be implicit in the application as filed. Thus, I am satisfied that these features of the claim do not relate to added matter.
- 23 However, I can find no basis, explicit or implicit, to support the matter underlined in the final paragraph of claim 1 above. This relates to how the characterisation profile for each participant is modelled; how information not provided directly by the participant is used to work out what is relevant, and how all the profile information – that which is predicted and that which is provided by the participant - is combined to establish the characterisation profile. I agree with the conclusion of the examiner that this constitutes added matter.

#### **Excluded Matter – Section 1(2)**

- 24 Given my conclusion above in relation to added matter, my assessment of excluded matter set out below is based on the claims as construed without the identified added matter.

#### ***The Law***

- 25 Section 1(2) of the Act sets out certain categories of invention that are not patentable as follows:

*“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 scheme, rule or **method for performing a mental act, playing a game or doing business, or 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.”*

- 26 Current IPO examination practice is to use the structured approach set out by the Court of Appeal in its judgment in *Aerotel/Macrossan [2006] EWCA 1371* (hereafter *Aerotel*) for deciding whether an invention is patentable. The test comprises four steps:
- (1) Properly construe the claim;
  - (2) Identify the actual contribution;
  - (3) Ask whether it falls solely within the excluded matter;
  - (4) Check whether the contribution is actually technical in nature.

Operation of this test is explained in paragraphs 40-48 of the *Aerotel* judgment. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is that the inventor has really added to human knowledge and involves looking at the substance of the invention claimed, rather than the form of the claim. Paragraph 46 explains that the fourth step of checking whether the contribution is technical may not be necessary because the third step – asking whether the contribution is solely of excluded matter - should have covered that point already.

- 27 More recently, the Court of Appeal in the case of *Symbian [2009] RPC 1* (hereafter *Symbian*) confirmed that this structured approach is one means of answering the question whether or not the invention reveals a technical contribution to the state of the art. In other words, *Symbian* confirmed that the four-step test is equivalent to the prior case law test of 'technical contribution', as discussed in *Merrill Lynch*<sup>1</sup>, *Gale*<sup>2</sup> and *Fujitsu*<sup>3</sup>. The key question is what does the 'technical contribution' amount to, not whether it happens to be implemented by a computer.

#### *Programme for a computer*

- 28 Lewison J (as he then was) in *AT&T/CVON Innovations [2009] EWHC 343* (hereafter *AT&T*) set out five factors or signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. These signposts were modified slightly in *HTC Europe Co Ltd V Apple Inc [2012] EWHC 1789*. The five signposts are:
- (i) Whether the claimed technical effect has a technical effect on a process which is carried on outside of 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.

---

<sup>1</sup> Merrill Lynch's application [1989] RPC 561.

<sup>2</sup> Gale's application [1991] RPC 305.

<sup>3</sup> Fujitsu Limited's application [1997] RPC 608.

- (v) Whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

*Method for doing business*

- 29 The Court of Appeal in *Aerotel* made clear that this exclusion is to be interpreted as encompassing tools or steps having administrative or financial character, noting (at para 68) that “*whether as an abstract or generalised activity or as a very specific activity, if it is a method of doing business as such it is excluded*”.
- 30 The business method exclusion is generic, as discussed in *Merrill Lynch*<sup>1</sup>, and providing a better way of conducting business, as confirmed in *Halliburton*<sup>4</sup>, will not confer patentability.
- 31 In carrying out the analysis for excluded matter, I am bound to follow the Court of Appeal judgement in *Aerotel* and apply the four-step test outlined therein.

**Analysis**

- 32 The first step in *Aerotel* is to construe the claim –

*Step (1): Properly construe the claim;*

Claim 1 without the added matter reads as follows:

*A content delivery server apparatus for a venue comprising*

*a processing resource, and*

*a communications interface with a known but variable capacity*

*wherein the resource is configured to support an interactive platform to allow a plurality of users to participate to receive content including information identifying content from the users,*

*the processing resource is arranged to obtain profile information relating to the participants, the information being different for different participants but having some consistent information,*

*the resource generates characterisation profiles, each being an aggregation of the profile information,*

*one of the characterisation profiles is chosen by the processing resource to allow participation of users meeting the profile in response to a request from a user for participation,*

*the chosen characterisation profile is used in identifying content to deliver.*

---

<sup>4</sup> Halliburton Energy Services Inc’s Applications [2012] RPC 129

33 This claim does not present any difficulties in terms of its construction other than to remind ourselves what some of the terms refer to:

- a) The interactive platform overlays a venue, a physical space with a geographic boundary. The boundary may be physical, the outer walls of a hall or stadium, a shopping centre, or may be a geofence enclosing a space where the content is to be delivered.
- b) Characterisation profiles of participants are created algorithmically from information collected from the participants. The characterisation profiles are constantly updated as the set of participating users changes and as they interact with the platform, changing so that they reflect the mix of participants at any time and so the content selected is relevant for more of the users it is delivered to.

*Step (2): Identify the actual contribution.*

34 A complete search has not been conducted thus it is the alleged, rather than actual, contribution that is being assessed.

35 In his letter of 1 July 2019, the attorney has argued that a computer program is merely the means by which the method is operated. It is proposed that the method has a technical effect in providing profiles from a volume of data sourced from participants within a venue, with variable reliability, avoiding a need to process too much data by creating an aggregate characterisation profile from the data available and using it as a proxy for the participants as a whole.

36 The attorney also argues that the proposal provides a solution where computational capacity is limited, by creating aggregate characterisation profiles which take into account the computational capacity in the venue.

37 However, I am satisfied that the claimed contribution does not relate to a system which takes into account the computational capacity in the venue in selecting the characterisation profile as suggested in the attorney's letter. As I have indicated above, this element of the claim is added subject matter unsupported by the application as filed.

38 It was argued at the hearing that the technical effect of the invention is the improved functioning of a control system made up from the combination of a plurality of smart devices within the venue with a central processing resource. The population of smart devices is changing as people move in and out of the venue space, and so, in turn, does the aggregate profile of the population within the venue that is being generated from this population. The aggregate profile is thus a dynamic one. In response to this dynamic aggregate profile, the control system may be used to cool or heat the venue, to provide intelligent storage which highlights products of interest to consumers in a venue, or to deliver relevant information to a meeting.

39 In the words of the applicant the innovation being proposed is an intersection of a content delivery system informed by a plurality of individual sensing devices linked to profiles of associated participants, allowing provision of outputs of greater value to at least some of the participants in the venue. However, in contrast to the argument

made by the applicant, the claim does not include any indication that the contribution relates to a computer system formed from the combination of a plurality of smart devices within the venue with a central processing resource.

- 40 Mr Fourman accepted at the hearing that the concept of supplying relevant content to a specific user was known at the priority date. He submits that the concept of basing the content selection on an aggregate profile of a plurality of users is what is new.
- 41 I agree with this point, and find that as claimed and supported, the alleged contribution is the delivery of content to participants, the content being selected based on a dynamic characterisation profile of participants which has been created from aggregation of profile information of a pool of participants.

*Step (3): Ask whether the contribution falls solely within the excluded matter;*

#### *Computer Program*

- 42 It is clear to me that the contribution, the delivery of content, based on a dynamic characterisation profile created from aggregation of profile information of users, is carried out using a computer and so relates to a computer program as such.
- 43 As a consequence, I have considered each of the AT&T signposts as a means to help determine whether the contribution is therefore a computer program as such or whether there is some technical effect. Regarding the first signpost, there is no technical effect outside the computer, the effect outside the computer is the selection of content which is more suited on average to the participants in the venue. The data being processed by the computer – profile information - is dependent on the participants. As a result, the effect is not operating at the architecture level and is not doing so independent of the nature of the data being processed, thus the second signpost does not assist. The various elements of the apparatus are all functioning in their usual manner, so the third signpost does not assist. The effect does not result in the apparatus running more efficiently or effectively, i.e. as a better computer, so signpost four is also not helpful. The fifth signpost is not helpful either because the problem being solved remains that of presenting more appropriate content to participants – which is a marketing/entertainment problem, not a technical one.
- 44 Thus, I am satisfied that there is nothing beyond a computer program as such in the contribution claimed.

#### *Business Method*

- 45 The examiner also objected to the invention as being excluded as a method for doing business. The attorney has put forward the argument that the computer program is merely the means by which the method is operated. The attorney argues that the method has a technical effect in providing profiles from a volume of data sourced from participants in a venue, with variable reliability, avoiding a need to process too much data by creating an aggregate characterisation profile from the data available and projecting it on to the participants as a whole.
- 46 The contribution of the claimed method is the delivery of content within a venue which is chosen according to aggregate characteristics of participants in the venue. The

contribution does not include improvements in efficiency of data processing, or a reduction in the amount of data processing needed. The method is used to provide more relevant advertising, or to encourage greater engagement of participants with the events or activities taking place in the venue, by establishing an aggregate profile to target the participants' interests. As indicated in *Merrill Lynch*<sup>1</sup>, the prohibition under section 1(2)(c) is generic, qualitative considerations do not enter into the matter – a better method of doing business is still a method of doing business and is excluded under the Act.

*Step (4) Check whether the contribution is actually technical in nature*

- 47 Given my answer under Step 3 above, I do not need to go on and consider this fourth step of the *Aerotel* test.

*Conclusion*

- 48 The claims on file at the date of the hearing add matter and relate solely to matter excluded from patentability under section 1(2) of the Act as a computer program and a method of doing business.

### **Amended claims - dated 15 October 2019**

- 49 As agreed at the hearing, the applicant filed a set of amended claims shortly thereafter to address the issue of added matter and the excluded matter objection. These claims replaced the claims considered at the hearing
- 50 There is one independent claim, claim 1 which relates to an apparatus which reads as follows:

*A content delivery server apparatus comprising:*

*a processing resource;*

*a communications interface;*

*an output device; wherein the processing resource is configured to support an interactive platform to allow a plurality of users to check-in to a venue participate through the use of the interactive platform;*

*the interactive platform is arranged to receive a plurality of participant identifying information associated with communication devices of the plurality of users, respectively, participating through interaction with the interactive platform;*

*the processing resource is arranged to obtain a plurality of profile information relating to the plurality of identified participants from the interactive platform, respectively; and*

*the processing resource is arranged to use the plurality of participant identifying information and/or the plurality of profile information to generate*

*a profile-based characterisation of the plurality of identified participants is [sic] used to algorithmically predict relevance*

*content is selected to be relevant to the profile of a plurality of participants checked-in to the venue*

*content delivered through the output device results in output [of] sound, vibration, rumble, lighting, visual effects, fireworks, smoke, temperature or other media output or changes to environmental conditions or building control functions within or around the defined venue or a venue display.*

### **Added matter**

- 51 The examiner dealing with this case considered that the amended claims dated 15 October 2019 are supported by the application as filed and do not include any matter not in the application as filed. I concur.

### **Excluded Matter – Section 1(2)**

#### *Analysis*

- 52 Again, in carrying out the analysis for excluded matter, I am bound to follow the Court of Appeal judgement in *Aerotel* and apply the four-step test outlined therein.

#### *Step (1): Properly construe the claim;*

- 53 There is one point to note in relation to the construction of proposed claim.
- 54 The nature of the characterisation profile is not immediately clear in so far as the claim states “*the processing resource is arranged to use the plurality of participant identifying information and/or the plurality of profile information to generate a profile-based characterisation of the plurality of identified participants is [sic] used to algorithmically predict relevance*” and so there appears to be an inconsistency in the final part of this phrase given what appears to be the inclusion of an additional word “is” (underlined above).
- 55 I am construing this phrase as meaning that the characterisation profile is used to predict relevance using known algorithm-based techniques. The profile-based characterisation is generated from the information that participants have provided that identifies them or from the information that the processing resource has used to derive the profile information for each participant. I note that either source of information can be used separately or in combination. This characterisation is then used to predict relevance of the content to the participants on which the profile-based characterisation is based, using known algorithm-based techniques. This relevance prediction is then used to select content of interest to the participants who are checked-in to the interactive platform. This plurality of participants does not have to be the same as that used to provide the data for the characterisation profile.

*Step (2): Identify the actual contribution.*

- 56 As noted previously, a complete search has not been conducted and thus the alleged contribution is to be assessed.
- 57 Although there is an explicit reference to the output device and the outputs that it delivers, the nature of the output device is unspecified, and outputs delivered include media outputs alongside non-specific environmental outputs and functions. Also, and as discussed at the hearing, the algorithmic modelling techniques used to establish relevance are known and so do not form part of the contribution. There is no common concept of how content delivered controls the output device. It is not suggested that any of these devices, or their control means, are anything other than conventional and so, in the unspecified form of the present claim they, and their control, do not form part of the contribution.
- 58 I consider that the alleged contribution is the communication to an output device in a venue, of content selected based on relevance to a dynamic characterisation profile of participants which has been created from aggregation of profile information of a changing pool of participants.

*Step (3): Ask whether the contribution falls solely within the excluded matter;*

*Computer Program*

- 59 I am satisfied that the contribution, as I have identified it, is carried out using a computer and so relates to a computer program as such.
- 60 Revisiting the AT&T signposts in the light of this alternative contribution, there remains no technical effect outside the computer, the effect outside the computer is still simply the selection of content to be suitable to the audience, recalling that the output device of the claim may simply output media content, there is no technical effect outside the computer required by the collection of possible output devices included in the scope of the claim. The data being processed by the computer – profile information - is dependent on the participants and so the computer is not operating at the architecture level independent of the nature of the data being processed, thus the second signpost does not assist. The various elements of the apparatus are all functioning in their usual manner, so the third signpost does not assist. The computer does not result in the apparatus running more efficiently or effectively, i.e. as a better computer, so the fourth signpost is also not helpful. The fifth signpost is not helpful either because the problem being solved remains that of presenting more appropriate content to participants – which is a marketing/entertainment problem, not a technical one.

*Business Method*

- 61 This claim is also excluded as a method of doing business. The contribution of the claimed apparatus is the delivery of content within a venue which is chosen according to aggregate characteristics of participants in the venue. The claim specifies an option where audio/visual/other media output is provided (which are the typical methods of displaying adverts). Thus, the apparatus is used to provide more relevant advertising, or to encourage greater engagement of participants with the venue, by establishing an aggregate profile to target the participants' interests. In my view, this is clearly an

improvement in the field of business and so is excluded from patentability under section 1(2).

- 62 However, I note that not all of the outputs referred to in the claim relate to audio/visual/other media output. The claim also includes outputs for controlling the environmental conditions in the venue, such as ‘temperature’, which would be experienced directly by the participants. In my view this is distinct from those outputs which provide more relevant advertising, or to encourage greater engagement of participants.

*Step (4) Check whether the contribution is actually technical in nature*

- 63 Given my answer under Step 3 above, I do not need to go on and consider this fourth step of the *Aerotel* test.

**Conclusion**

- 64 The claims filed on 15 October 2019, following the hearing, relate solely to matter excluded from patentability under section 1(2) of the Act as a computer program and a method of doing business.

**Preliminary View regarding possible amendment**

- 65 A letter to the applicant, dated 30 December 2019, set down my preliminary view that the amended claims dated 15 October 2019 did not overcome the excluded matter objection and that the application as claimed relates to a computer program and to a method of doing business – as discussed above.
- 66 Having considered the application as filed and, taking account of the points made by the attorney and Mr Fourman at the hearing regarding how certain outputs derived from the dynamic aggregation of profile information of a changing pool of participants in a venue can be used to adjust the environment in the venue experienced by these participants, I considered that there was scope for a possible amendment to overcome the excluded matter objection. Identifying the specific outputs and a control system operated by the apparatus using the dynamic characterisation profile created from aggregation of profile information of a changing pool of participants within the venue would offer a possible way forward. In particular, page 43, lines 16 to 21, of the description would appear to identify such a specific control system.
- 67 A reply date of 21 January 2020 was set for a response from the applicant to this preliminary view.

## Amended claims - dated 21 January 2020

68 The applicant filed a set of amended claims dated 21 January 2020 comprising one independent claim and dependant claims 2-32 to replace the amended claim set dated 15 October 2019. The amendments, dated 21 January 2020, are extensive and are based on the claims as originally filed. They are not based on the amended claim set, dated 15 October 2019, which was discussed above and to which the above-mentioned preliminary view relates.

69 Independent claim 1 as amended on 21 January 2020 now reads as follows:

*A content delivery server apparatus comprising:*

*a processing resource;*

*a communications interface; wherein*

*the processing resource is configured to support an interactive platform to allow a plurality of users within a variously defined venue specified by a participant entering a defined "geofence" or digital real-estate boundary, or geographical boundary to participate through use of the interactive platform in order to receive, when in use, information identifying content communicated from the devices of the plurality of users;*

*the interactive platform arranged to receive a plurality of participant identifying information associated with devices of the plurality of users, respectively, participating through interaction with the interactive platform;*

*the processing resource is arranged to obtain a plurality of profile information relating to the plurality of identified participants from the interactive platform, respectively; and*

*the processing resource is arranged to use the plurality of participant identifying information and the plurality of profile information to generate a profile-based characterisation of the plurality of identified participants as a statistical or analytical summary of a predictive relevance combination of the attributes of profiles of participants associated within the venue as representative of the plurality of users and so to dynamically adjust input variables of a building control system or venue control system of that venue as sound, vibration, rumble, lighting, visual effects, fireworks, smoke, temperature or other media output or changes to environmental conditions or building control functions within or around the defined venue or a venue display.*

70 The examiner dealing with this case considers that the amended claims dated 20 January 2020 are supported by the application as filed and do not add matter. I concur.

### *Analysis*

71 As before, in carrying out the analysis for excluded matter, I am bound to follow the Court of Appeal judgement in *Aerotel* and apply the four-step test outlined therein.

*Step (1): Properly construe the claim;*

- 72 Amended claim 1 indicates that the profile-based characterisation is generated by the processing resource from the information that participants have provided, through the interaction of their devices within the defined venue that identifies them and from the information that the processing resource has used to derive the profile information for each participant. I note that the claim as amended now makes clear that both sources of information are used in combination to generate this profile.
- 73 The meaning of the term “input variables” in the final part of amended claim 1 merits some consideration. The variables listed as input variables are very varied and cover a wide range of different types of effects – sound, visual or lighting, and more physical movement effects such as vibration or rumble, smoke and fireworks. These are all characterised as being variables for a control system for a defined venue or a display within that venue. These variables are referred to as “*media output*”, “*changes to environmental conditions*” or “*changes .... to building control functions*”. What all of these input variables have in common is that they are adjusted based on the changes to profile-based characterisation, and the summary derived from it, from the information that participants have provided, through the interaction of their devices within the defined venue. to provide a media output which include a change at environmental conditions or changes to building control functions.

*Step (2): Identify the actual contribution.*

- 74 As noted previously, a complete search has not been conducted and thus the alleged contribution is to be assessed.
- 75 The profile-based characterisation takes the form of a “*statistical or analytical summary of a predictive relevance combination of the attributes of profiles*”. As discussed at the hearing, the algorithmic modelling techniques used to generate this summary are known and so this does not form part of the contribution.
- 76 The summary, and the profile-based characterisation from which it is derived, is “*representative of the plurality of users*” because of the interaction between the devices of the participants (or users) within the venue. Based on this summary, the processing resource is used to adjust the input variables of the venue control system. This adjustment is dynamic - it changes as users move in and out of the venue as the interaction of their devices with the interactive platform and each other in the venue changes.
- 77 Amended claim 1 does not indicate how the building control system works, it responds to the changing profile of the participants in the venue so that the content that the apparatus delivers to the participants in the venue is more relevant to them, thus it can change what they experience - see, hear, or feel. These effects can be experienced in some or all of the venue and can take the form of moving image displays such as TV or computer displays. Such effects are adjusted as the profile characterisation changes to ensure that the content being delivered to the participants in the venue continues to be relevant.

- 78 The summary changes as the users in the venue change leading to a change in the input variables for the building venue leading to a change in the content being delivered to the users and how that content is being experienced by each user.
- 79 I consider that the alleged contribution is the communication to people in a venue of content based on a dynamic characterisation profile of the participants in that venue which has been created from aggregation of profile information of a changing pool of participants, this content being experienced as different types of media output such as sound or visual in the venue.

*Step (3): Ask whether the contribution falls solely within the excluded matter;*

- 80 The apparatus of the invention uses a computer program for its implementation, but the fact that the invention is given effect in software does not mean that it should necessarily be excluded as a program for a computer as such. The question to be determined is whether or not the program provides a technical contribution. I will turn again to the AT&T signposts as a helpful tool when answering this question.
- 81 The alternative contribution as I have outlined above does not deliver a technical effect outside the computer. The effect outside the computer is still simply the selection of content to be suitable to the participants in the venue, recalling that the input variables identified for the venue control system are very broadly defined and can be used to control a display or some form of media output or some other condition within that venue. The input variables referred to will result in changes to what the participants in the venue are experiencing in the environment around them through their sense of sight or sound or smell. The contribution is about how these are better adjusted to take account of the profiles of the participants moving into and out of the venue derived from a combination of actual and modelled data. It is aligned with having a system that improves the quality and quantity of the participants experience in the venue. The variables being adjusted to account for the changes in the participants profiles are not limited to the variables that relate to the physical environment (for example, temperature, humidity) because of changing number and activities of participants in the venue. They include a much wider range of variables that are designed to deliver better targeting of services and experiences (for example, displaying items or services of interest, items, available for purchase, options available for entertainment, options to interact with other participants). It is more about improving interaction with the venue that will lead to change in behaviour of participants such as increased spending or engagement with activities in that venue. As a result, I find that the first signpost does not offer any assistance.
- 82 The data being processed by the computer – profile information - is dependent on the participants and so the computer is not operating at the architecture level independent of the nature of the data being processed, thus the second signpost does not assist.
- 83 The third signpost emphasises that the effect must be more than just the running of a program or application on a general-purpose computer – the computer itself must operate differently than it did before as a result of the program being run. The various elements of the apparatus – the processing resource and the communications interface are all functioning in their usual manner, so the third signpost does not assist.

- 84 The fourth signpost is approached in a similar way to the third in that the computer must operate more efficiently and effectively as a result of running the program. Again, this must be the computer as a whole, rather than the individual program. There is no effect in my view on how the computer itself operates beyond the normal interaction between an application program and a computer. The contribution does not point towards some generally applicable way of operating a computer system, but rather it is a better software program for profiling the participants within the venue and providing various types of output in response to that dynamically adjusting profile. The invention as claimed does not result in the apparatus running more efficiently or effectively, i.e. as a better computer, and so this signpost is also not helpful.
- 85 The fifth signpost asks whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented. In this case the problem being solved remains that of presenting more appropriate content to participants based on the profile generated from the participants in the venue. Whether this content is of more relevance or use to the participants, is decided by the user. The contribution is not a technical solution, in my view, it is a way to better deliver information – which is a marketing/entertainment problem, not a technical one.

#### *Business Method*

- 86 The contribution of the claimed content delivery apparatus is the delivery of content within a venue which is chosen according to aggregate characteristics of participants in the venue. The claim specifies an option where audio/visual/other media output is provided (which are the typical methods of displaying adverts). Thus, the apparatus is used to provide more relevant advertising, or to encourage greater engagement of participants with the venue, by establishing an aggregate profile to target the participants' interests. In my view, this is clearly an improvement in the field of business and so is excluded from patentability under section 1(2).

#### *Step (4) Check whether the contribution is actually technical in nature*

- 87 Given my answer under Step 3 above, I do not need to go on and consider this fourth step of the *Aerotel* test.

#### **Conclusion**

- 88 I find that the invention, as claimed at the date of the hearing is excluded under Section 1(2) of the Act because it relates to matter not disclosed in the application as filed and relates to a program for a computer as such and to a method for doing business.
- 89 I further find that the invention as claimed in the application as amended on 15 October 2019 is excluded under Section 1(2) of the Act because it relates to a program for a computer as such and to a method for doing business. I considered that there was scope for a claim that would overcome the excluded matter objection (based on amended claim 1, dated 15 October 2019, now superseded by the amendments filed on 21 January 2020) which related to content delivered to control a specific environmental effect, such as lighting, temperature, as indicated in my preliminary view.

90 However, having considered the invention as claimed in the latest set of amendments dated 21 January 2020, filed in response to the above preliminary view, I find that it is excluded under Section 1(2) of the Act because it relates to a program for a computer as such and to a method for doing business. As a result, I refuse this application for failure to meet the requirement under Section 18(3) of the Act.

**Period for putting the application in order (the compliance period)**

91 The period for putting this application in order under Section 20 of the Act, the compliance period, has been extended, firstly under rule 108(2) and, subsequently rule 108(3) of the Patents Rules 2007 (as amended) until 20 February 2020.

92 The deadline for seeking any further extension to the compliance period under rule 108(3) was 20 April 2020 subject to filing of the necessary form and payment of the requisite fee. Such an application for an extension to the compliance period under rule 108(3) is at the discretion of the Comptroller.

93 As a consequence of the COVID-19 coronavirus pandemic, the Comptroller has declared 24 March 2020 and subsequent days until further notice to be "interrupted days". This means that the deadline of 20 April 2020 for requesting a discretionary extension of the compliance period under rule 108(3) has been extended until the next uninterrupted day. A request for extension of the compliance period received before the next uninterrupted day will extend the compliance period until the next uninterrupted day. The Office has not yet announced when the period of interrupted days will end.

94 However, I note that while a possible route of amendment was identified in relation to the claims filed on 15 October 2020 and brought to the attention of the applicant in the above mentioned preliminary view, the amended claims dated 21 January 2020 did not successfully address the issue of excluded matter under Section 1(2) of the Act. Thus, any further request to extend the compliance period under rule 108(3) would need very careful consideration.

**Appeal**

95 Any Appeal must be lodged within 28 days after the date of this decision.

**Dr L Cullen**

Deputy Director, acting for the Comptroller