



BL O/195/05

13th July 2005

PATENTS ACT 1977

APPLICANT NTT Communications Corporation

ISSUE Whether patent application N^o GB 2384596 A
is excluded from patentability by section 1(2)

HEARING OFFICER Stephen Probert

DECISION

Introduction

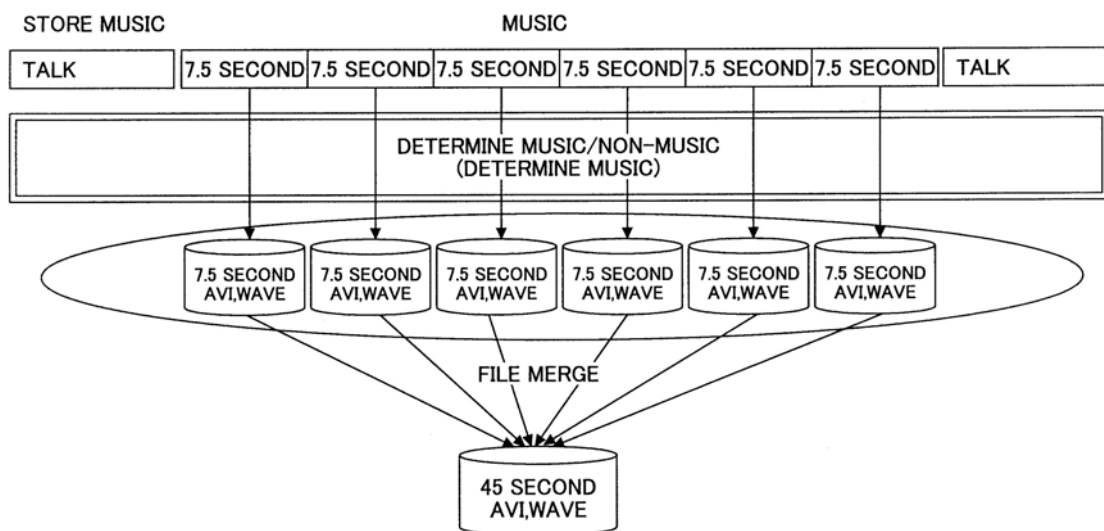
- 1 Patent application GB 0309208.7 entitled “Music recognizing method, system,” was filed on 22nd October 2001 in the name of NTT Communications Corporation. The application claimed priority from two Japanese applications, the earliest of which was filed on 29 November 2000. It was published by WIPO as WO 2002/035516 on 2 May 2002, and the front page was re-printed by the UK Office on 30 July 2003 with the serial number GB 2384596 A.
- 2 During the course of substantive examination in the UK Patent Office, the examiner reported that the application relates to a scheme, rule or method for performing a mental act or doing business, and a program for a computer as such. Other objections were also raised, on the grounds that the claims:
 - a. lacked novelty,
 - b. were not concise, and
 - c. related to more than one invention.
- 3 However, these other objections have either been overcome by amendment, or put to one side in view of the potentially fatal objection that the application does not relate to a patentable invention. In the third examination report, the examiner observed that it was unlikely that further correspondence would resolve the issue and he invited the applicant to request a hearing. The applicant agreed, and requested that a hearing be appointed. The matter therefore came before me at a hearing on 28 April 2005, at which the applicant was represented by Mr Mark Kenrick of Marks & Clerk.

The Invention

- 4 The invention concerns a system and method for recognising and identifying music in a radio broadcast, and generating a ‘playlist’ from the results. A second group of claims in the same application concerns a system and method for recognising a

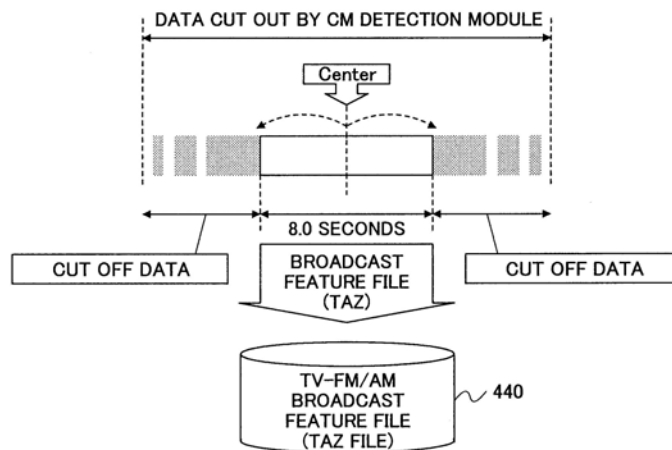
television or radio commercial (advertisement) in a TV or radio broadcast. In both cases, the invention is said to provide an advantage over the prior art inasmuch as the recognition is performed, and the playlist generated, “in real-time”. Furthermore, in the first instance, the invention operates over a network such that a plurality of broadcasts can be monitored at remote locations, while the playlist is generated at a central location.

- 5 The invention defined in the first group of claims makes use of conventional techniques to distinguish between music and non-music (eg. speech) in a broadcast. The step of separating the musical items from the remainder of a broadcast is performed at each remote location. It involves splitting the broadcast up into 7½ second portions. Each 7½ second portion is analysed using known methods, and then the musical portions are stitched back together (omitting any non-musical portions) and transmitted to a central computer. Figure 19 of the specification, reproduced below, conveniently illustrates these stages of the process.



- 6 By eliminating any non-musical portions of the broadcast at the remote locations, the system reduces the amount of data that needs to be transmitted to the central computer. (Mr Kenrick submitted that this reduction in network traffic is the most significant technical contribution provided by the invention.) When the data representing the music (eg. the 45 second AVI or WAV file in the above figure) is received at the central computer, it is compared with a database of known musical pieces in order to determine the name of the piece. Finally, when the musical piece has been identified, the name is added to the playlist.
- 7 The second group of claims in the application concerns the recognition of TV or radio commercials in broadcasts. The beginning and end of a commercial is detected using conventional techniques. Rather than searching for the whole commercial (typically thirty seconds long), the idea of the invention is to isolate an eight second portion taken from the centre of the commercial. The eight second portion is then treated as a representative sample of the whole commercial, for the purposes of searching a database of known commercials.

8 The invention defined in this second group of claims does not include the step of transmitting the data over a network. Nevertheless, Mr Kenrick argued that it involved a technical contribution because of the way in which it avoided “edge effects”, and because by cutting the data to a predetermined length (eg. eight seconds), the subsequent comparison process is simplified and the results are improved. This second embodiment is conveniently shown in figure 15 of the specification, which is reproduced below.



9 Although I have described two embodiments, or two related inventions, the examiner has reported that they are in fact two *separate* inventions that are not so linked as to form a single inventive concept — contrary to section 14(5)(d) of the Act. Although this is an important objection, it was put to one side during the latter stages of examination, and it was not mentioned at the hearing. Evidently there was no point arguing over how many inventions are contained in the application when the examiner maintains that none of them are patentable inventions.

The Law

10 The examiner has reported that the application relates to a scheme, rule or method for performing a mental act or doing business, and a program for a computer as such. This objection is based on section 1(2) of the Act, the essential parts of which are shown in bold 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 -

- (a) a discovery, scientific theory or mathematical method;
- (b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;
- (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.

- 11 It has been established by the Courts that an invention will not be excluded from patentability by the above subsection if it makes a technical contribution¹. That is to say, if an invention makes a technical contribution, then it is *more than* one of the above excluded items, and cannot be regarded as “that thing *as such*”.
- 12 At the hearing, I indicated to Mr Kenrick that I did not think his application related to a scheme, rule or method for doing business as such. After mature reflection, I still think this is the case. Furthermore, I do not think that the first group of claims (ie. involving the extraction of musical portions from broadcasts at a plurality of remote locations) can reasonably be regarded as a method for performing a mental act as such. While it clearly involves many individual steps that could be performed mentally (and would previously have been performed as mental acts), there is more to the invention than this. In particular, the distributed nature of the invention — the fact that it ‘listens’ to broadcasts in a plurality of areas, but performs the eventual comparison in a single, central location — suggests that it is more than a method for performing a mental act as such.
- 13 That still leaves the following two matters to be decided:
- a. is the invention in the first group of claims a program for a computer as such?
 - b. is the invention in the second group of claims a scheme, rule or method for performing a mental act and a program for a computer as such?

Mr Kenrick’s submissions

- 14 Mr Kenrick submissions covered a number of previously decided cases. For example, from *ARM’s Application*² he reminded me that when determining the matter of patentability, it is the substance of the invention that is important. In the *Vicom* case³ Mr Kenrick drew my attention to paragraphs 3 and 4 of the headnote which read:
- III A claim directed to a technical process which process is carried out under the control of a program (whether by means of hardware or software), cannot be regarded as relating to a computer program as such.
- IV A claim which can be considered as being directed to a computer set up to operate in accordance with a specified program (whether by means of hardware or software) for controlling or carrying out a technical process cannot be regarded as relating to a computer program as such.
- 15 I can see why Mr Kenrick referred to these paragraphs. *Vicom* has been quoted with approval by the Court of Appeal on a number of occasions, confirming that computer programs that control or carry out technical processes are not excluded from patentability in the United Kingdom; evidently such programs are not to be regarded as computer programs “as such”. Nevertheless in the present case, before Mr Kenrick can derive any assistance from *Vicom* on this point, I would have to be satisfied that

¹ *Fujitsu Limited’s Application* [1997] RPC 14 at page 614.

² *ARM Limited’s Application* BL O/292/04 dated 23rd September 2004

³ *Vicom/Computer-related Invention* T 208/84

the computer program is controlling or carrying out “a technical process”, since this is the basis of the Board’s statement in the headnote.

- 16 Mr Kenrick also referred me to *Sohei*⁴, another decision of the EPO Board of Appeal, and sought to establish from this case that computer programs are not excluded from patentability ...

“ ... if technical considerations concerning particulars of the solution of the problem the invention solves are required in order to carry out that same invention.” (Headnote I)

- 17 This seems to be saying that the presence of any technical features is enough to overcome the exclusions to patentability. If that is so, then it is clearly at odds with the judgments of the UK Courts. Moreover, to the extent that I can follow the reasoning of the Board of Appeal in *Sohei*, it appears to be inconsistent with other decisions of the EPO Boards of Appeal. Consequently, in reaching my decision in this case, I have not found the *Sohei* decision to be helpful in any way.

- 18 Finally, Mr Kenrick took me to *Comvik*⁵ to show that when the Board wanted to determine whether an invention solved a technical problem, it looked at the person who would normally be concerned with solving that problem. At paragraph 8 of its reasons, the Board says:

“8. Finally, the identification of the skilled person may also need careful consideration. The skilled person will be an expert in a technical field. If the technical problem is concerned with a computer implementation of a business, actuarial or accountancy system, the skilled person will be someone skilled in data processing, and not merely a business man, actuary or accountant.”

- 19 From this, Mr Kenrick sought to persuade me that businessmen, actuaries and accountants are *not* technical people, while somebody skilled in data processing *is* a technical person. Applying this reasoning to the facts of the present case, it was Mr Kenrick’s submission that the person who would be concerned with solving the problems identified in this application would be a signal processing engineer, or an expert in data processing, and that therefore the problem that they have solved must necessarily be a technical problem. I think there may be *some* weight to this argument, although I do not think it is reliable as a general principle — not least because if one develops the argument to its logical conclusion it would suggest that all computer programs must be patentable because they are written by technical people, ie. people with data processing skills. Such a conclusion cannot be right, since the Courts have consistently said that computer programs that do not involve a technical contribution are not patentable in the UK. That would be a pointless thing to say if all computer programs necessarily involve a technical contribution.

The first group of claims - Generating a playlist of musical pieces

- 20 Focussing on the substance of the invention, as Mr Kenrick agreed I should do, the first group of claims in the application concerns a system for generating a playlist of

⁴*Sohei/General-purpose management system* T 769/92

⁵*Comvik/Two Identities* T641/00

musical pieces featuring in broadcasts in a plurality of locations. The invention involves the elimination of non-musical portions of broadcasts at the remote locations, such that the amount of data that needs to be transmitted over a network to a central computer is reduced. As stated above, it is admitted in the specification that there is nothing inventive about the means by which the non-musical portions are eliminated. The search process itself is also entirely conventional. Rather Mr Kenrick argued that the idea of stripping out the non-musical portions of a broadcast at the remote locations *before the broadcast data is transmitted over a network* was a “neat technical solution to a technical problem”⁶ — in particular because it reduces network traffic.

- 21 This is not the first time that one of the Comptroller’s Hearing Officers has been presented with the argument that an invention involves a technical contribution because it reduces the volume or density of data traffic being transmitted over a network. Undoubtedly there will be occasions when the solution proposed involves a technical contribution, but this will not always be the case. What makes the difference is *how* the network traffic is reduced. For example, if the application discloses technical improvements to the transmission network or communication protocols, then that is likely to be a technical contribution.
- 22 In this instance, the inventor has realised that there is no point transmitting non-musical data (eg. speech or conversation) from a remote location to a central computer, if the central computer is only interested in generating a playlist of musical pieces. I do not think that amounts to a technical contribution. It would be like reducing the bandwidth requirements of a telephone network by asking subscribers not to use the telephone unless their call is really necessary. In other words, it doesn’t really *solve* the problem — it *avoids* it.
- 23 It is clear from the specification that each stage of the process is controlled by a computer program. At the hearing Mr Kenrick did not disagree that the invention involved a computer program — although he firmly maintained that it was not a computer program **as such**. Nevertheless, since I have found that it does not involve a technical contribution, I am led to the conclusion that the first group of claims relates to a program for a computer as such. With reference to the headnote in *Vicom*⁷, I have concluded that in this instance the computer program is not controlling or carrying out a technical process.

The second group of claims - Recognising commercials

- 24 The second group of claims is concerned with the problem of identifying TV or radio commercials in a broadcast. The beginning and end points of a commercial are detected using conventional methods. Typically such commercials are around thirty seconds long. However, rather than compare the whole of each commercial with the entries stored in a database, the method of the invention takes an eight second sample of the commercial and searches the database for a match on the basis of this truncated sample.

⁶*ARM Limited’s Application* BL O/292/04 — see paragraph 24.

⁷See paragraphs 14 and 15 above.

- 25 Mr Kenrick argued that the substance of this invention is very clearly in the field of signal processing, and he submitted that it involves a technical contribution because the data comparison process is simplified — ie. the system only has to work with an eight second portion of the commercial, and not the whole commercial. He also emphasised that the method of the invention requires selecting the eight second portion from the centre of the commercial (as shown in the figure in paragraph 8 above). As he put it, this “avoids edge effects”. I understood this to mean that the methods used to identify the beginning and the ending of commercials are not 100% reliable, and that there are likely to be small errors, of perhaps a couple of seconds, in locating what the application calls the “cut points”.
- 26 By analogy with *ARM’s Application*, Mr Kenrick said that the way in which data representing a commercial is cut to a predetermined length, and taken from the centre of the commercial, provides a “*neat technical solution to the technical problem*”⁶ of accurately sampling broadcast data.
- 27 Taking the best view I can of the matter, I still cannot see this invention in the same light as Mr Kenrick. To begin with, I am not altogether convinced that the problems associated with edge effects are really technical problems. But even if I were to give the applicant the benefit of any doubt (as Mr Kenrick submitted I was bound to do in keeping with the comments of Laddie J in *Fujitsu*⁸), I am unable to see how the solution of taking a small sample from the centre of a commercial can be said to ‘solve’ the problem of edge effects. Again, it appears to me to be *avoiding* the problem, rather than *solving* it. Moreover, even if it were considered to solve the problem, I fail to see how it could reasonably be described as a “technical solution”.
- 28 In order to demonstrate the existence of a technical contribution, an application must at least attempt to add to the stock of human knowledge in a technical field. In the present case, Mr Kenrick says that the applicant has made such an attempt, because they have explained that, when identifying a commercial in a broadcast, the problem of edge effects can be solved by taking a sample from the centre of the commercial. Even assuming that this ‘solution’ is new and non-obvious, I do not think that it adds anything to the stock of human knowledge **in a technical field**, and more specifically I do not think that it represents a technical contribution.
- 29 Recognising TV and radio commercials is clearly a mental act. Moreover, in this instance it is also clear from the patent application that this invention is performed by means of a program for a computer. As I have found that it does not involve a technical contribution, it follows that this invention is a scheme, rule or method for performing a mental act as such, and a program for a computer as such. Again, with reference to my earlier comments regarding the headnote in *Vicom*⁷, I have concluded that in this instance, the computer program is not controlling or carrying out a technical process.

⁸*Fujitsu Limited’s Application* [1996] RPC 17 at page 533.

Unity of invention - Are there two inventions?

- 30 This subject was not specifically discussed at the hearing. Mr Kenrick was very careful to make his submissions in respect of “two groups of claims” in the application and I have adopted his terminology in this decision . In the circumstances, in particular since I have decided that neither ‘group’ of claims relates to a patentable invention, there is no need for me to decide whether the two groups relate to a single invention. Therefore I choose not to.

Conclusion

- 31 I have decided that the first group of claims in this application (claims 1-3) relates to a program for a computer as such, and that the second group of claims (4-9) relates to a scheme, rule or method for performing a mental act as such, and a program for a computer as such. I have read the whole application carefully, and I cannot see any amendment that would overcome these exclusions to patentability. Consequently I refuse this application under section 18 on the grounds that any inventions claimed therein are excluded by section 1(2)(c).

Appeal

- 32 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days of the receipt of this decision.

S J PROBERT

Deputy Director acting for the Comptroller