



PATENTS ACT 1977

APPLICANT Luke Leonard Martin Porter

ISSUE Whether patent application GB 1313192.5 complies
with section 1(2)

HEARING OFFICER Dr C L Davies

DECISION

Introduction

- 1 Patent application GB 1313192.5 ("the application") entitled "Bitemporal relational database and methods of manufacturing them, and of using them" was filed on 24 March 2013, with an earliest declared priority date of 26 July 2012. It was published as GB 2505313 A on 26 February 2014.
- 2 Following a number of rounds of correspondence between the examiner and the applicant's attorneys, the examiner remains of the view that the claimed invention is excluded from patentability under section 1(2).
- 3 With the position unresolved the applicant asked to be heard and the matter came before me at a hearing on 30 June 2021. The issue of excluded matter before me was set out in the examiner's pre-hearing report of 4 May 2021. The applicant was represented at the hearing by attorneys Mr John Lawrence and Mr Adam Gilbertson of Barker Brettell LLP. I thank the attorney for filing skeleton arguments prior to the hearing. I was assisted by Mr Marc Collins.

The invention

- 4 The invention relates to bi-temporal relational databases i.e. databases including a valid time and transaction time. In such databases, the data content can change over time, errors can occur in data entry, and queries may relate to "old" database content. This can give rise to temporal overlaps and gaps in the data.
- 5 Therefore, the problem the invention addresses is how to provide an improved bi-temporal relational database that ensures there are no temporal gaps or overlaps in data.
- 6 The invention supports data integrity and temporal queries in a transaction database under evolving data entries/content by storing the temporal data separately in three underlying tables and automatically updating time data/generating end-dates to

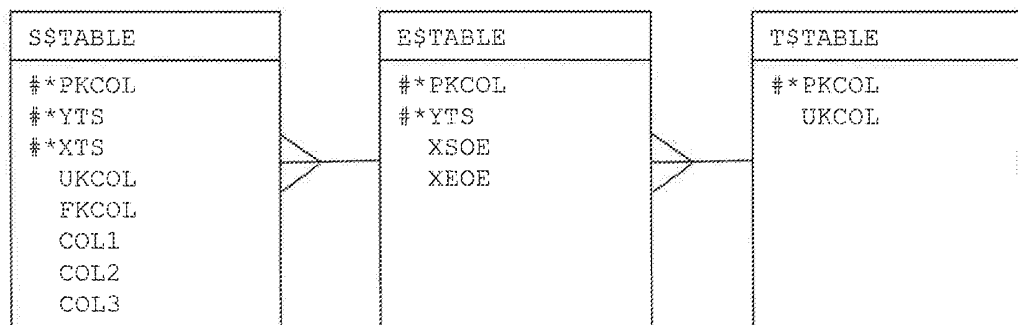
avoid temporal overlaps. As a result, the possibility of gaps/overlaps in valid time is eliminated, and the user does not have to manually enter/update end times of transactions because they are automatically updated from the start times of subsequent events entered by the user.

- 7 The temporal relational database and a database management software system of the invention uses database keys ("primary" and "unique keys") and three tables to handle historical data along two different timelines (bitemporal database) where the business data and the time data are placed in the three tables and through use of database identifiers it is ensured that there are no gaps/overlaps in the time data.
- 8 This is illustrated in figure 3 below. A bi-temporal relational database structure with the business data and associated time data stored in a combination of a summary table S\$, an event table E\$ and a T\$ table. The S\$ table stores all versions of all the rows of business data, each row having at least transaction time, valid time and business primary key columns. The E\$ table holds the valid start of existence and valid end of existence of each row in the S\$ table thus avoiding the need to store end dates of rows in the S\$ table with the rows of the E\$ table being dimensional by at least transaction time and business primary key. The T\$ table holding the primary key and unique keys of all the rows in the S\$ table dimensioned by business primary key. The system is designed as a current view with primary key and unique key constraints, and time-related issues being taken care of by the SS, T\$, and E\$ tables automatically generated as the data structure of the system is populated with data.

Key	Meaning
#	Indicates a Primary Key Column
*	Indicates a Mandatory Column
O	Indicates an Optional Column
PKCOL	Primary Key
UKCOL	Unique Key
FKCOL	Foreign Key
COL1, COL2, COL3	Non Key
YTS	From Transaction Timestamp (Y-Timestamp)
XTS	From Valid Timestamp (X-Timestamp)
XSOE	Start of Existence Valid Timestamp
XEOE	End of Existence Valid Timestamp
T\$TABLE	T\$ table e.g. T\$EMP
E\$TABLE	Event table e.g. E\$EMP
S\$TABLE	Summary Table e.g. S\$EMP

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9 The claims have not been amended since filing and include four claims including independent claim 1. Independent claim 1 is set out below:

1. *A temporal relational database and associated data structure and database management software system comprising:*

computer memory and a computer processor adapted to process data held in the memory;

business data and associated time data held in computer memory; and

database management software held in computer memory and runnable on the processor to interact with the business data;

the data structure comprising having the business data and associated time data held in three tables, a first S\$ table, a second T\$ table and a third E\$ table, where:

the S\$ table (summary table) contains all versions of the all rows of business data, the rows having at least dimensions of transaction time, valid time, and business primary key;

the ES table (event table) holds the valid start of existence and valid end of existence of all rows in the S\$ table, avoiding storing end dates of rows in the S\$ table, and the rows of the E\$ table being dimensional by at least transaction time and business primary key;

the T\$ table holds the primary key and unique keys of all rows in the \$ table dimensioned by business primary key;

and wherein the database management software when run on the processor allows:

(i) the entry of new rows in the S\$ table with the transaction time being set by the system clock and the valid time and business data being manually entered or read/generated by the processor, entries in the S\$, E\$ and T\$ tables being automatically generated by the database management software; and

(ii) allows a user to query the database to select a current view report with valid time now, or a report where both valid time and transaction time are specified by the user, the report showing the values of entities in the S\$ table specified by the selected valid and transaction time dimensions; and

(iii) a report of entities showing start and end times for entities to be generated, with the actual start and end of existence times being held in the T\$ table; and

(iv) a valid time history view of values of entities to be obtained, and a transaction time history view of values of entities can be obtained; and

wherein referential rules managing values of entities are stored in a referential rule dictionary and control relational aspects of values of the entities.

The Issues to be decided

- 10 The issue for me to decide is patentability i.e. whether the claimed invention relates to excluded subject matter, and in particular whether the invention falls into one of the categories set out in section 1(2)(c) of the Patents Act 1977 as a program for a computer as such.

The law

- 11 The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention is not patentable because it relates inter-alia to one or more categories of excluded matter. The relevant provisions of this section of the Act 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.

- 12 The examiner and the applicant agree that the assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel*¹, as further interpreted by the Court of Appeal in *Symbian*².
- 13 In *Aerotel*, the court reviewed the case law on the interpretation of section 1(2) and approved a four-step test for the assessment of what is often called "excluded matter", as follows:

Step one: properly construe the claim

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

² *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1

Step two: identify the actual contribution (although at the application stage this might have to be the alleged contribution)

Step three: ask whether it falls solely within the excluded matter

Step four: check whether the actual or alleged contribution is actually technical in nature.

14 Subsequently, the Court of Appeal in *Symbian* made clear that the *Aerotel* test is not intended to provide a departure from the previous requirement set out in case law, namely that the invention must provide a "technical contribution" if it is not to fall within excluded matter. The *Aerotel* test has subsequently been endorsed by the Court of Appeal in its decisions in both *HTC*³ and *Lantana*⁴.

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

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

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

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

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

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

16 It should be clear that the signposts are merely guidelines; although they provide a useful aid in assessing the technical character of a claimed invention, they were not intended to provide a definitive test (as Lewison LJ's obiter remarks in paragraph 149 of *HTC* make clear). Several judgments have emphasised this point - John Baldwin QC (sitting as a Deputy Judge) in *Really Virtual*⁷ noted that the signposts, although useful, are no more than signposts and that there will be some cases in which they are more helpful than in others. Kitchin LJ made similar remarks in

³ *HTC Europe Co Ltd v Apple Inc* [2013] RPC 30

⁴ *Lantana v Comptroller-General of Patents, Designs and Trade Marks* [2014] EWCA Civ 1463

⁵ *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

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

⁷ *Really Virtual Co Ltd v UK Intellectual Property Office* [2012] EWHC 1086 (Ch)

paragraph 51 of *HTC* that their usefulness does not mean they will be determinative in every case.

Burden of proof

- 17 In their attempts to persuade the examiner that the claims are not excluded under section 1(2), Mr Lawrence and Mr Gilbertson have put forward argument concerning the appropriate standard of proof an applicant should meet. They refer to the hearing officer's decision in *Landmark Graphics Corporation* (BL O/112/18) and highlights paragraph 17 which reads:

"Mr Russell and Dr Jones suggest that an applicant should be given the benefit of the doubt unless there is no reasonable doubt to be had. Insofar as this reasonable doubt is the same as the substantial doubt to which Mann J refers, I can agree with this principle. I consider that the question for me is whether or not there is such substantial doubt regarding each of these seven applications, such that where an applicant makes a reasonable case that their invention is patentable then I am bound to find in their favour. I shall proceed on this basis."

- 18 The hearing officer's assessment above is based on paragraphs 7-9 in *Macrossan*. Looking at paragraph 9 of *Macrossan*, Mann J says (emphasis added):

*"Mr Birss, in his written submissions for the Comptroller, points out that Whitford J was not addressing a question of principle in what he said. I agree with that, but his statement nonetheless seems to reflect a principle or principles which are consistent with what Laddie J said in *Fujitsu*. That principle seems to involve the onus being on the person alleging that the alleged invention is within the exclusion. The reference to the benefit of the doubt is probably intended to signify that if there is **substantial doubt** then the burden has not been fulfilled. I do not consider that it means that if there is **any doubt** (legal or factual) **then the application should succeed**. It is not intended to import something like the criminal burden of proof into the proceedings. The tribunal still has to consider whether the exception applies, and it can come to the conclusion that it does without having to find that there is no doubt at all about it."*

- 19 Mr Lawrence and Mr Gilbertson agree with the hearing officer's assessment in *Landmark* of the case law of the courts, namely "where an applicant makes a reasonable case that their invention is patentable then [the Examiner is] bound to find in their favour". They argue that their argument below, at least, meets this standard and accordingly the claims of the present application should not be rejected as constituting excluded matter.
- 20 The current practice of the Office in this regard is set out in paragraph 1.10 of the Manual of Patent Practice, as follows:

*"The Court of Appeal, in paragraph 5 of *Aerotel Ltd v Telco Holdings Ltd & Ors Rev 1* [2007] RPC 7 (*Aerotel/Macrossan*), made it clear that assessing excluded matter involves a question of law which should be decided during prosecution of the patent application. The position is therefore assessed fully by patent examiners before grant, and objections are not to be dropped simply*

because the applicant asserts that the invention relates to non-excluded subject matter. The question of excluded matter is decided on the balance of probabilities, taking into account all of the evidence available. However, as it is a question of law, it is not something on which applicants are entitled to the benefit of the doubt, in the way they would be in relation to questions of pure fact (such as the date of a particular disclosure, or the scope of the common general knowledge)."

- 21 As discussed by the hearing officer in *Landmark*, that insofar as the “reasonable case” and “reasonable argument” is the same as the substantial doubt to which Mann J refers, I can agree. I agree with the hearing officer’s conclusion that the question for me is whether or not there is such substantial doubt regarding this application, such that where an applicant makes a reasonable case that their invention is patentable then I am bound to find in their favour. I shall proceed on this basis.

Arguments and analysis

- 22 The examiner maintains that the claims define an invention which consists of a program for a computer. Her position is set out most recently in her pre-hearing report. Detailed arguments against the examiner's position are contained in the applicant's responses to the examination reports, through their attorney. These arguments were elaborated clearly and helpfully at the hearing by Mr Lawrence and Mr Gilbertson. Taking all these arguments into account, I must determine whether the claimed invention relates solely to excluded subject matter under section 1(2).

Step 1: Properly construe the claims

- 23 The first step of the test is to construe the claims. I do not think this presents any real problem since both the applicant and the examiner appear to agree as to the meaning of the claims.

Step 2: Identifying the actual or alleged contribution

- 24 Mr Gilbertson explained that the problem addressed by the invention is how to provide an improved bi-temporal relational database that ensures there are no temporal overlaps or gaps in the data. The invention achieves this by storing time data separately in three underlying tables and automatically updating the tables and automatically generating end dates to avoid temporal overlaps and gaps. The end dates are automatically generated from the user inputted start dates. Therefore, the invention eliminates the need for the user to manually enter transaction end dates.

- 25 Mr Gilbertson has suggested the contribution to be:

An improved bi-temporal relational database system with an underlying data structure in which business data and its associated time data are held in separate tables such that start and end dates of the business data are not stored in the same table as the business data. The underlying tables are automatically populated when business data in the “normal” relational table or “application layer” is added, changed or deleted, and through the use of database identifiers it is ensured that there are no temporal gaps/overlaps in

the business data. In this way, the user (the data enterer) does not need to physically enter and maintain end dates other than start of existence as this is automatically handled by the underlying data structure.

The examiner has accepted this formulation of the contribution and I am happy to adopt it.

Steps 3 and 4: Does the contribution fall solely within excluded matter/is it technical in nature?

- 26 What I must now decide is whether the contribution identified above relates solely to a program for a computer as such. This corresponds to step three of the *Aerotel* test.
- 27 The fourth step of the test is to check whether the contribution is technical in nature. In paragraph 46 of *Aerotel* it is stated that applying this fourth step may not be necessary because the third step should have covered the question. This is because a contribution which consists solely of excluded matter will not count as being a "technical contribution" and will not, as the fourth step puts it, be "technical in nature". Similarly, a contribution which consists of more than excluded matter will be a "technical contribution" and so will be "technical in nature".
- 28 In this case, the arguments concerning whether the invention is excluded are very much wrapped up with the question of whether the contribution is technical in nature. Given that, I have considered the third and fourth steps together.

Computer program

- 29 Mr Gilbertson contends that the invention of claim 1 is on all fours with the invention set out in *Lenovo*⁸. Therefore, as the invention in *Lenovo* was considered to not be a computer program as such and thus allowable, the present invention should also be considered allowable. He considers the present invention to have the effect of reducing the number of data entry steps and physical interactions the user makes with the computer through an automated process to be akin to the invention in *Lenovo* which results in the user not having to take any extra physical steps at the point of sale where they use their contactless cards.
- 30 In my view, the key paragraph for consideration from *Lenovo* is paragraph 36 which reads:

The key question in this case is whether the invention involves a different physical interaction with the world outside the computer, as compared to what had gone before. As I have said already, I would agree with the reasoning at the end of paragraph 26 if the technical effect relied on resided in pressing a button in a computer system because that is a conventional feature of using conventional computer systems. Those features may be technical in a sense, but they cannot add technical character to make a computer program as such patentable. However, again as explained above, the point of this invention is the opposite. It is in US 438 that the user has to press a button to choose which card to use or to split the payment between two cards. In the Lenovo

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

*invention, this is handled automatically at the point of sale because the user's preferences have already been acquired and stored elsewhere. The automatic nature of the process is recognised in the formulation of contribution identified in the decision at paragraph 21. As a result of this automatic feature, **the card clash problem experienced with contactless payment cards is solved without the user having to take any extra physical step at the point they use their contactless cards.** In my judgment that difference is an effect of the invention which is neither a computer program as such nor a method of doing business as such nor a combination of the two. That difference is technical in character and, in the context of the invention as a whole, it is not just one of the normal incidents of a conventional computer system. [emphasis added]*

31 From my understanding of the reasoning in *Lenovo*, the fact that the user had set preferences at an earlier stage, resulted in a different physical interaction with the world outside of the computer at the point the user used their contactless cards. In the cited prior art, US 438 the user has to press a button to choose which card to use or to split the payment between two cards at the point of sale. However, in *Lenovo* when the user presents multiple cards the card clash problem is overcome automatically since the user has previously set preferences for splitting any payments between multiple cards i.e. the need for the user to press a button at the point at which they present their cards for payment is removed.

32 Mr Gilbertson highlights paragraph 26 of *Lenovo* which reads:

"Making a physical interaction obsolete is capable of giving rise to a technical effect but ... it is important to examine the detail."

33 I agree that making a physical interaction obsolete is capable of giving rise to a technical effect, but in this case I do not. In *Lenovo*, the user has a different physical interaction with the world outside the computer, as compared to what had gone before as the user is no longer required to take any extra physical steps at the point of use of their cards due to user preferences set previously. The user merely presents their cards, and payment split between cards is carried out automatically. This is not analogous to the present invention. I agree with the examiner that, even if a user inputting data into a computer is regarded as being "outside" the computer, a user operating the database of the invention would still need to input some data in an entirely conventional way. This is because even if the user would not need to update some of the time data, then this would still not eliminate the need to enter some data.

34 Furthermore, I agree with the examiner's reasoning that the interactions between the user and the computer are the same as those needed when interacting with a conventional computer in a conventional way; it is only the interaction with the database that may be different. Therefore, unlike *Lenovo*, the present case concerns, to use the judge's words, "*just one of the normal incidents of a conventional computer system*". As a result, the examiner considers that the database here "involves a different physical interaction with the world outside the computer, as compared to what had gone before".

35 Therefore, I do not consider the present invention to be allowable for the same reasoning set out in *Lenovo*.

- 36 In this case, it is clear that the arrangement of hardware used to implement the invention is immaterial to the working of the invention. The hardware is all conventional hardware. Given this point, the contribution must therefore be viewed as being embodied purely in a computer program. Whilst the method of the invention undoubtedly uses a computer program for its implementation, the mere fact that the invention is effected in software does not mean that it should be necessarily excluded as a program for a computer as such. What matters is whether or not the program provides a technical contribution.
- 37 At this point it is useful to consider the *AT&T/CVON* signposts as they are a helpful aid when considering whether a computer program makes a technical contribution. The examiner has made reference to the signposts in her pre-hearing report and in her assessment determined the contribution failed to satisfy any of the five signposts. Mr Lawrence and Mr Gilbertson disagree and consider all five signposts to be satisfied by the contribution.
- 38 Mr Lawrence's arguments regarding the first signpost are closely aligned with his argument concerning the relevance of *Lenovo*. Mr Lawrence has argued that the present invention results in a different physical interaction with the world outside of the computer and thus has a technical effect on a process carried out outside the computer. For the same reasoning as above with regard to *Lenovo*, I am not persuaded by this argument i.e. I do not consider the contribution to give rise to a different physical interaction with the world outside the computer, as compared to what had gone before. I am minded to agree with the examiner that the contribution concerns a new method of automatically updating certain time attributes of a database. As such, there is no process carried on outside the computer. Therefore, in my view the first signpost is not met and points away from there being a technical contribution.
- 39 With regard to the second signpost, Mr Lawrence argued that the effect of the invention is produced irrespective of the data being processed or the applications being run and thus operates at the architectural level of the computer. I am not persuaded by this argument. The program does not change how the "computer" runs internally. In practice, this means in the sense of the operation of the processor, the cache memory, or other internal components of the computer. As argued by the examiner, the contribution is at the level of the architecture of a database, which is not the same as computer architecture. There is nothing that is affected below the application layer of the computer arrangement. In other words, the computer is conventional and runs conventionally. Therefore, in my view the second signpost points away from there being a technical contribution.
- 40 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. Mr Lawrence considers the computer to operate in a new way in that it takes the entered start dates and automatically generates the end dates. Again, I am not persuaded by this argument. I consider the computer to be operating in the usual way to perform the instructions of the program in the same way as it would for any program. The contribution does not point towards some generally applicable way of operating a computer system, but rather the contribution is a better software program with the purpose of selecting the best content assembly for the process/content

route. I agree with the examiner that the computer is conventional; instead it is the database that may operate in a new way. Therefore, in my view the third signpost points away from there being a technical contribution.

- 41 The fourth signpost is approached in a similar way to the third. 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. Mr Lawrence contends that as the data is entered in a more efficient manner and errors in end date are eliminated leading to correct answers to queries, the computer is a better computer. The examiner states that she cannot identify a feature that would result in the computer running more efficiently or effectively as a computer. Again, she considers the alleged contribution relates merely to database software which is application software. I am minded to agree with the examiner. Whilst the invention provides more efficient data entry and errors in end date are eliminated leading to correct answers to queries, there is no effect on how the computer itself operates beyond the normal interaction between an application program and a computer or network of computers. In other words, the contribution does not point towards some generally applicable way of operating a computer system, but rather the contribution is a better software program with the purpose of eliminating temporal overlap or gaps in the data. However, this does not provide a more efficient computer – any potential improvement to efficiency does not apply to the computer itself. The computer itself does not run more efficiently in carrying out the instructions of the computer program. In my view the fourth signpost is not met and points away from there being a technical contribution.
- 42 The fifth and final signposts asks whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented. The fifth signpost looks at the technical character of an alleged invention by means of the problem addressed. When the problem is a technical one, the alleged invention can be considered to have a technical nature leading to it falling outside the exclusion if (but not only if) it solves the problem. In *Lantana* Mr Justice Briss stated:
- “It makes sense to think of something which is a solution to a technical problem as itself having technical character because it takes that character from the technical nature of the problem to be solved. But if a thing is not solving the technical problem but only circumventing it, then that thing cannot be said to have taken any technical character from the problem.”*
- 43 The problem addressed by the invention how to eliminate temporal overlaps or gaps in the data in a bi-temporal relational database. The examiner has argued that the problem is one of structure and operation of a bi-temporal database and is not a technical problem because it concerns only an application that manages structured sets of data. Mr Gilbertson submits that whilst a relational database concerns the management of structured sets of data, this does not make a relational database non-technical, nor does it make the problem of how to make an improved relational database a non-technical one.
- 44 Mr Gilbertson referred to a decision by the EPO Boards of Appeal (BoA) in T1924/17 as demonstrating that the BoA has adopted a consistent approach and outcome when deciding on the technicality of inventions relating to relational database

management systems. Mr Gilbertson highlighted passages from paragraphs 9 and 13:

*“A database management system is not a data structure, but a software system for storing, retrieving and processing data which typically uses various data structures for the efficient management of data. Hence, these systems are not merely static memory configurations, they implement methods operating on the data... **the Board sees no reason why relational database management systems should be non-technical.**”*

“Such database management systems are software platforms for the centralised control of data (“central database”). Features of these platforms often have a technical character, as they have been designed based on engineering considerations concerning the efficient exploitation of the computer system as a technical system.”

45 Therefore, it is submitted that the problem solved by the invention is a technical one, at least because it relates to processing structured queries and efficient management of data in a database management system.

46 Having given consideration to the decision in T1924/17, I note that further in paragraph 9 it is explained:

“However, for the avoidance of doubt, the Board notes that its position is not that all features implemented in (relational) database management systems contribute by virtue of this fact alone and independent of their nature to the technical character of an invention. For example, a feature of a database management system for accounting costs related to the use of the system by different users may be regarded as being non-technical.”

47 Thus, it would appear that whilst the BoA considers relational database management system to be technical in nature and features thereof to also often be technical, it is not sufficient for an invention to merely be implemented in a relational database management system for the invention to be considered technical in nature.

48 The invention ensures there are no temporal overlaps or gaps in data in bi-temporal relational databases caused by human error in inputting incorrect start or end dates. To my mind this is a non-technical problem with the invention residing in an application that automatically assigns an end date from the inputted start date. Further the invention doesn't solve a technical problem lying within the computer. It merely provides a software function by which temporal overlaps or gaps in data are eliminated.

49 Furthermore, I am not persuaded that the problem addressed by the invention is overcome by the proposed solution. The invention does not solve the problem of human error when inputting data, but rather circumvents the problem by removing the need for end dates to be manually inputted. Therefore, signpost (v) is not satisfied.

50 Looking at the fourth step, as discussed above I do not consider the contribution to be technical in nature

Burden of proof

- 51 I return briefly to Mr Gilbertson's argument regarding the burden of proof. He argues that the disagreement between the examiner and themselves creates substantial doubt as to whether the application should be excluded from patentability. I disagree. In my view there is a clear distinction between *Lenovo* and the present invention as discussed above. To my mind the arguments put forward by Mr Lawrence and Mr Gilbertson do not create **substantial doubt** that the present application should be refused. In my view, merely the presence of a difference in interpretation of case law cannot be sufficient to create such a substantial doubt.

Conclusion

- 52 Having carefully considered the arguments, I am of the view that the problem addressed by the claimed invention is not technical in nature. That the invention is implemented by a computer, which in itself is technical, does not confer a technical contribution to an invention which would be otherwise lacking in that respect. The contribution falls solely within the matter excluded under section 1(2) as a program for a computer as such.
- 53 I find that the claimed invention is excluded under section 1(2)(c) as a program for a computer as such. I therefore refuse this application under section 18(3).

Appeal

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

C.L. Davies

Deputy Director, acting for the Comptroller