

original access applications have become obsolete without having to migrate the database to a new platform or manually write a dedicated access program.

- 6 The claims I have been asked to consider were filed with the Attorney's letter of 12 March 2014. There are 23 claims in total of which claims 1 and 2 are independent. They read as follows:

Claim 1

A computer-implemented method for providing a computer program for accessing an existing database, the method comprising:

*automatically obtaining data indicating data stored in said database;
automatically generating a schema based upon the obtained data;
applying at least one first script to the generated schema, said at least one first script being arranged to modify the generated schema to generate an intermediate schema;
automatically modifying the intermediate schema to generate a modified schema comprising configuration data usable to configure a computer program to access the database; and
configuring a computer program for providing access to the database based upon said modified schema.*

Claim 2

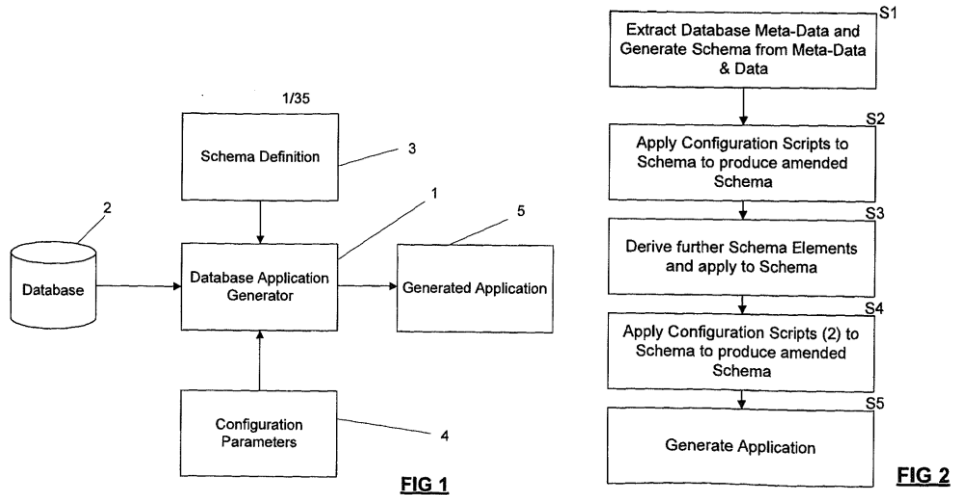
A computer-implemented method of accessing data in an existing database, the method comprising:

*automatically obtaining data indicating data stored in said database;
automatically generating a schema based upon the obtained data;
applying at least one first script to the generated schema, said at least one first script being arranged to modify the generated schema to generate an intermediate schema;
automatically modifying the intermediate schema to generate a modified schema comprising configuration data usable to configure a computer program to access the database;
configuring a computer program for providing access to the database based upon said modified schema;
and accessing data stored in the database using the generated computer program.*

- 7 Thus claim 1 is directed to a method of generating a program for accessing an existing database and claim 2 to a method of using the program so generated to access that database.
- 8 To the uninitiated, the terminology used in the claims is not particularly transparent but the invention functions as follows (with reference to figures 1 and 2 from the specification):

The database application generator extracts metadata concerning the existing database (e.g. the structure of the database, tables and relations) and uses this metadata to produce a first pass XML schema which describes the general structure of the database and its constituent elements (e.g. tables, views, columns, keys, indices, foreign keys and relationships). User specified scripts are used to modify the first pass schema resulting in a second pass XML schema. These scripts may be used to add extra information relating to the database (in the form of elements and attributes) so that the resultant application meets particular requirements. This is the first schema referred to in claim 1. The second pass schema is then modified by deriving further schema elements and applying them to the schema resulting in a

third pass schema that includes additional elements which define the application to be generated. The additional elements may relate to what searches can be performed and how results may be displayed. This is the “intermediate schema” in claim 1. This third pass schema may then be further modified by scripts so as to meet developer requirements. The resultant fourth pass schema may be used to generate the application, by e.g. generating Java (RTM) source code.



The Law

- 9 Section 1(2) of the Patents Act 1977 sets out various things are not considered to be inventions for the purposes of the Act. It reads:

“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.”

- 10 These provisions are designated in Section 130(7) as being so framed as to have, as nearly as practicable, the same effect as Article 52 of the European Patent Convention, to which they correspond. I must therefore also have regard to the decisions of the European Boards of Appeal that have been issued under this Article in deciding whether the present invention is patentable although I am not bound to follow them.
- 11 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 its judgment in *Symbian*².

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

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 “excluded matter”. Those steps are:

- i. properly construe the claim;
- ii. identify the actual contribution;
- iii. ask whether the identified contribution falls solely within the excluded subject matter;
- iv. check whether the actual or alleged contribution is actually technical in nature.

12 In its judgment in *Symbian* the Court 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. Thus in deciding whether the invention is excluded as a program for a computer *as such* I must ask whether it makes a technical contribution (though it does not matter whether I do that at step 3 or step 4). The *Aerotel* test has subsequently been further endorsed by the Court of Appeal in its judgments in *HTC*³ and *Lantana*⁴.

Applying the Aerotel test

Step 1

- 13 Throughout the correspondence attention has focussed on claims 1 and 2. I too will focus on those claims before addressing the other claims should I need to.
- 14 Construing claims 1 and 2 does not provide any particular difficulties despite the technical jargon employed. Claim 1 defines a computer implemented method for generating a computer program to access an existing database. Information indicating the contents of the database is automatically obtained and a (first pass) schema based on this data is generated. A first script is applied to this first schema so as to produce a second pass (intermediate) schema. The intermediate schema is then further modified so as to include configuration data such that it can be used to generate a computer program for accessing the existing database. Finally, the program is generated.
- 15 Claim 2 is directed to a computer implemented method of accessing an existing database comprising the same steps as claim 1 but with the additional step of using the program to actually access the database.

Step 2

- 16 Guidance on how to identify the contribution is given in paragraph 43 of the *Aerotel* judgment where the court accepted the proposition that identifying the contribution is ‘an exercise in judgment probably involving the problem said to be solved, how the

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

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

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

invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form – which is surely what the legislator intended’.

- 17 There seems to be little if any disagreement between the examiner and the applicant on the contribution provided by the invention of claims 1 and 2. There is no suggestion in the specification that any of the hardware employed in implementing the invention is anything other than conventional. The contribution clearly resides in the particular way that the database access program is generated. But consistent with the above passage from *Aerotel* the applicant also considers (and the examiner has accepted) that the problem solved by the invention and the advantages it provides are also relevant. I agree. The invention provides advantages of reduced labour and risk of human error over the previous ways of solving the problem of providing access to now obsolete databases (which required migration or a developer writing a database specific access program from scratch). I therefore consider the contribution provided by the invention to be a more efficient and reliable method for automatically generating a database access program.
- 18 I would add that I consider this to be the contribution made by both claims 1 and 2. The court in *Aerotel* reiterated the longstanding principle that when assessing the patentability of an invention, it is the substance of the invention that is important, not the form of claim employed. Whilst claim 1 is directed to the method for generating the database access program and claim 2 is directed to the method of accessing the database using the program so generated, I am in no doubt that the substance of both claims is a computer program and that they make the same contribution.

Steps 3 and 4

- 19 Deciding that the substance of the invention is a program for a computer is of course not the end of the matter. It is very well established in the case law that a program which provides a technical contribution is not excluded ie it is not a program for a computer *as such*. In his judgment in *AT&T*⁵, Lewison J (as he then was) drew upon the plethora of case law on excluded matter in formulating a set of signposts to assist in determining whether a computer program provides a technical contribution. These were endorsed in a slightly modified version by the Court of Appeal in *HTC* and now read as follows:

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;

⁵ *AT&T Knowledge Ventures/Cvon Ltd [2009] EWHC 343 (Pat)* available at: <http://www.bailii.org/ew/cases/EWHC/Patents/2009/343.html>

iv) whether a program makes a computer a better computer in the sense of running more efficiently as a computer

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

- 20 The applicant's attorney and the examiner have used the framework provided by these signposts in their exchanges over whether the invention is excluded or not. I will also use them in my assessment though I note Kitchen LJ's qualification at paragraph 51 in *HTC* that whilst useful, "they will not be determinative in every case".

Signpost 1

- 21 The applicant contends that the invention does provide an effect external to the computer and that signpost 1 therefore points to it being patentable. In advancing this proposition he says that the result of performing the method of claim 1 is the generation of a program that is a tangible product that can be transferred to or implemented on another computer. Thus he says the end result of performing the invention of claim 1 can be an entity that exists outside and can be used outside the computer on which it is created. He went so far as to say that this is in effect a method of manufacturing a tool and should thus be patentable.

- 22 I am in no way persuaded by those arguments. The contribution made by the invention is a program for generating a program to access a database (which is itself a program). The generation of the program occurs within a computer and when it is run the end effect – accessing the database - is achieved within a computer. That the process of accessing the database might take place on a different computer to the one on which the access program was generated is irrelevant. The only effect achieved is within the computing environment. There is no effect outside a computer in the sense of the signpost.

Signposts 2 and 4

- 23 Many of the arguments put forward by the applicant are relevant to signposts 2 and 4. Consequently I will deal with them together before moving onto signposts 3 and 5 (though I note that the applicant has not relied specifically on signpost 3).
- 24 In this element of his case, the applicant points to the fact that databases are an essential element in many if not all the functions carried out by a computer. Thus, he argues, a tool that allows more efficient access to databases will make for a more efficient and effective computer. In attempting to draw a parallel with the invention found to be patentable in *Symbian*, the applicant has stressed that this improvement in efficiency and effectiveness is achieved irrespective of the data being processed or the application being run which requires access to the database. Whilst that may appear to be an attractive argument, in my view it is flawed. The invention in *Symbian* provided a way of avoiding conflicts when different applications used the same ordinal address to access different functions stored in a Dynamic Link Library. That enabled the computer to interact with multiple devices and applications more reliably. The issue addressed by the present invention is an entirely different one – how to provide access to a specific pre-existing database. In contrast to *Symbian*, the invention here is at the level of a single application - providing access to a pre-

existing database. The invention does not provide a technical effect at the level of the architecture of the computer. That the database can contain any sort of data and can itself be used for any number of applications is irrelevant. Thus signpost 2 is of no assistance to the applicant.

- 25 Similarly signpost 4 offers no assistance to the applicant either. Whilst the invention might indeed facilitate access to information from databases where that would otherwise be difficult, the program at the heart of the invention does not make the computer “a better computer in the sense of running more efficiently and effectively as a computer.” The claimed effect is a computer generating a program to access a database, and the use of the program to access a database. These are the effects of a program as such running on a computer – nothing more.

Signposts 3 and 5

- 26 As regards signpost 3, I do not consider the claimed technical effect results in the computer operating in a new way above and beyond the way any computer functions differently when running a new program. It addresses the non-availability of programs for accessing a database, not the way the computer operates.
- 27 That leads me to signpost 5. The focus of much of the correspondence between the examiner and the applicant has been whether the invention provides a solution to the problem of providing access to legacy databases or whether it merely circumvents that problem. The examiner has also reported that that is not a technical problem, which the applicant refutes. I have considered those arguments but I do not consider this to be a case where signpost 5 provides any useful guidance. It is clear from his own description of the problem to be solved that the inventor’s contribution is a program for automating the process of writing a program to access a specific database that was previously done manually. The benefits that it provides by automating these error prone and time consuming tasks are precisely the sort of advantages that computerisation would be expected to provide and the invention does not provide the technical contribution required to escape the computer program exclusion.
- 28 For completeness I will stand back from the detailed arguments provided by the applicant and the examiner and look at the invention overall. I have found that in substance the invention defined in claims 1 and 2 relates to a program for automatically generating a program to access a database that is itself a program. However useful that program may be it is nothing more than a program for automating what was previously done manually with all the attendant benefits that computerisation brings. I can see no relevant technical effect provided by the invention.

Step 4

- 29 I have effectively answered step 4 in my analysis of step 3 above. I have been unable to identify any relevant technical effect provided by the invention defined in claims 1 and 2. The invention does not provide a technical contribution and cannot be said to be technical in nature.

Decision

- 30 I have found that in substance, the invention defined in independent claims 1 and 2 relates to a program for a computer as such and is excluded by section 1(2)(c) of the Act. I can see nothing in the remaining claims or in the specification as a whole that could form the basis for a valid claim. I therefore refuse the application under section 18 (3) for failure to comply with section 1(2)(c).

Appeal

- 31 Any appeal must be lodged within 28 days

A BARTLETT

Deputy Director acting for the Comptroller