PATENTS ACT 1977

APPLICANT	Apple Inc
ISSUE	Whether patent application number GB1016416.8 complies with Section 1(2)
HEARING OFFICER	Ben Buchanan

DECISION

1   Patent application GB1016416.8 entitled "Data synchronization protocol" was filed by Apple Inc as PCT application PCT/US2009/035909 on 3 March 2009 with a claim to priority of 4 March 2008. The application was republished on 22 December 2010 with the serial number GB2471227. The Examiner adopted section V of the International Preliminary Report on Patentability as his first examination report, issued on 24 January 2012. Amended claims were filed in response on 2 August 2012, and a second examination report was issued on 12 October 2012 in consideration of these claims, raising objection under section 1(2). The Examiner considered the claims to define a program for a computer and a method for doing business as such.

2   The applicant replied on 3 December 2012, filing counter arguments and requesting a hearing should the Examiner not consider the application to be in order. The normal unextended compliance period expired on 24 January 2013. On 20 February 2013, before a hearing had been scheduled, the applicants requested a decision on the papers.

The Invention

3   The invention relates to a method of synchronizing data, including representing messages as text or binary property list files (plist). The synchronization protocol provides for exchanges between a client and server in which separate sync modes (e.g. fast, slow, reset) are associated with different dataclasses and the dataclasses can be updated in parallel. This is achieved by proposing and agreeing the sync mode for each dataclass; sending sync-start, sync-changes and finally a sync-commit command between client and server.

4   By sending commands in parallel, data can be updated with fewer message round trips. Thus the advantages of the claimed invention are greater reliability

and lower bandwidth usage (by using fewer messages and roundtrips) as well as recovery from interruption (by using sync anchors to track sync sessions).

The Claims

5   The claims under consideration are those filed on 2 August 2012. Independent claims 1 and 10 relate respectively to a method and apparatus:

1. A method of synchronizing data, the method comprising:
receiving at a server a request to initiate a sync session, the step of receiving the request comprising
receiving a separate proposed sync mode for each of multiple dataclasses, and receiving changes to multiple data items of the multiple dataclasses;
generating at the server one or more status codes to indicate whether the proposed sync mode for each dataclass is accepted;
based on the generated status code, using the accepted sync mode for each dataclass to selectively update in parallel the multiple data items associated with the one or more received changes; and
selectively committing the updated data items at the server.

10. A synchronization server comprising:
a processor configured to operate
a transport protocol that enables opening of one or more connections to one or more client devices; and
a sync protocol that enables data synchronization between the server and the one or more client devices over the opened one or more connections, wherein the sync protocol enables the server to
receive a request to initiate a sync session, wherein the request includes
a separate proposed sync mode for each of multiple dataclasses received in parallel, each dataclass comprising a group of data entities, and
changes to the multiple dataclasses,
generate one or more status codes to indicate whether the proposed sync mode for each dataclass is accepted,
based on the generated status code, using the accepted sync mode for each dataclass to selectively update data items associated with the changes to the data classes, and
selectively commit the updated data items.

6   Claim 20 defines a computer program product to implement the method or server of previous claims.

The Law

7   The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention is not patentable because it relates to a method for doing business and a program for a computer as such. The provisions of this section of the Act are shown below:

Section 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.*

8   As explained in the notice published by the UK Intellectual Property Office on 8 December 2008[1], the starting point for determining whether an invention falls within the exclusions of section 1(2) is the judgment of the Court of Appeal in *Aerotel/Macrossan*[2].

9   The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian*[3]. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel/Macrossan*, the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel/Macrossan* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel/Macrossan* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*[4] which rested on whether the contribution was technical; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case. But the *Symbian* judgment does make it clear, that in deciding whether an invention is excluded, one must ask does it make a technical contribution? If it does then it is not excluded.

10   Subject to the clarification provided by *Symbian*, it is therefore appropriate to proceed on the basis of the four-step approach explained at paragraphs 40-48 of *Aerotel/Macrossan* namely:

1) Properly construe the claim.

2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution).

3) Ask whether it falls solely within the excluded matter.

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[1] http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-computer.htm
[2] *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7
[3] *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1
[4] *Merrill Lynch's Application* [1989] RPC 561

4) If the third step has not covered it, check whether the actual or alleged contribution is actually technical.

11   The operation of this test is explained at paragraphs 40-48 of the decision. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 46 explains that the fourth step of checking whether the contribution is technical may not be necessary because the third step should have covered the point.

12   The Examiner and Applicant have provided arguments following *Aerotel/Macrossan* and *Symbian* and this is the approach I shall apply.

Construing the claims

13   The first task is to construe the claims. Independent claims 1 and 10 define a method and apparatus for synchronizing data including separate sync modes for each of multiple data classes received *in parallel*, specifying changes to data of the multiple data classes, using a status code to indicate whether the sync mode for each dataclass is accepted, in accordance with the sync mode for each dataclass, updating the data *in parallel* and selectively committing the changes.

14   I have italicised the feature(s) *in parallel* because the independent claims differ slightly in this respect; the method (claim 1) specifies updating data in parallel; the server (claim 10) specifies proposing a sync mode for multiple data classes in parallel.

15   The current authority on claim construction is found in *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9[5], where Lord Hoffman held that "When applying a 'purposive construction', the question is always what the person skilled in the art would have understood the patentee to be using the language of the claim to mean".

16   This is helpful in respect of claims 1 and 10. I do not think the meaning of either claim alone is unclear, but I think a skilled reader would understand the patentee to mean that the invention can perform both sync modes and data updates in parallel. This is consistent with the only embodiment of parallel data updates, shown in Figure 29 of the application. Although the scope of the substance of claims 1 and 10 differs slightly, they are consistent with the description and may be readily construed.

Identify the actual contribution

17   For the second step of *Aerotel/Macrossan*, it is necessary to identify the actual contribution made by the invention. At this stage, the contribution is that alleged by the applicant. In their most recent letter, the applicant defines the contribution as:

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[5] *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9

A single request from a client [which] can be used to transmit separate proposed sync modes from different entities.

18   In his letter of 14 December, the Examiner agrees that the contribution may be defined as above.

19   I have to say I am uncomfortable with this formulation. "Entities" are referred to in the present application as both a 'structured data type' (grouped definitions of which may be referred to as a 'dataclass') and as a client or server device. In other words, an entity may be either a data entity or a device entity.

20   In contrast it is clear from the claims as I have construed them that a request to initiate a sync session comprises receiving a separate proposed sync mode for each of multiple *dataclasses.* This is the terminology of the claims and should form the basis for the definition of the contribution which the claimed invention provides.

21   The applicant also asserts that:

      This leads to the benefit of a reduced number of messages required to be transmitted (and consequential benefits, such as reduced overall network bandwidth used).

22   At paragraph 43 of *Aerotel/Macrossan*, the Court seeks to assist the identification of the contribution by considering the problem to be solved, as well as how the invention works and its advantages. This requires more than just the difference over the prior art (upon which the applicant's formulation is based), but also how it is put into effect and its advantages.

23   I therefore consider the alleged contribution (applicants proposed element underlined) to be:

      Synchronizing data including initiating a sync session by <u>receiving a request comprising a separate proposed sync mode for each of multiple data classes</u>, specifying changes to data of the multiple data classes, using a status code to indicate whether the sync mode for each dataclass is accepted, in accordance with the sync mode for each dataclass, updating the data and selectively committing the changes, which means that a reduced number of messages is required to be transmitted.

Does the contribution fall solely within excluded subject matter? Is the contribution technical in nature?

24   In his Examination Report of 12 October 2012, the Examiner argued that the contribution was not technical, and relates solely to a method of doing business and a computer program. This position was re-iterated in his final letter of 14 December 2012.

Method of doing business

25   The contribution is defined in terms of data processing and not by the nature of the data in each dataclass being synchronised. Embodiments refer to calendar,

contact and bookmark data being synchronised, which may well form the basis for a method of doing business, but I do not think they necessarily limit the contribution to a method for doing business as such. The question is whether the contribution in terms of data processing goes beyond the advantages of synchronising the dataclass data per se (e.g. updating a calendar). The synchronised data may be 'business data', and the method of synchronising it may be performed in the course of business, but the contribution to data processing is broader, for example including the provision and processing of sync modes and does not, to my mind, mean that the contribution falls within the category of a method for doing business as such.

Program for a computer

26   There is, however, no doubt in my mind that the contribution requires a computer program for its implementation. The question of whether it falls solely within the remit of a program for a computer seems to me to be the turning point of this decision. Is the contribution more than a program for a computer? Is it technical?

27   In correspondence, the Examiner and the Applicant, in arguing whether or not the contribution fell solely in the excluded subject matter and was technical, considered *Vodafone*[6] and *Kapur v Comptroller*[7]. They also considered the *five signposts* which Lewison J set out in *AT&T*[8]. Following *AT&T*, in *Really Virtual*[9], John Baldwin QC (sitting as a Deputy Judge) noted that the *AT&T signposts*, although useful, are no more than signposts. Most recently, the signposts were again considered in *HTC v Apple*[10]. I must assess the alleged contribution on the facts and features[11] of this application. Whilst *Vodafone* and *Kapur* are helpful in ensuring my approach is consistent with the Courts, the five signposts are relevant here. I will consider them in turn:

    (i)   *whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;*

28   Whether the 'computer' is the client or the server between which data is being synchronised, the process 'outside the computer' is the communication of data across a network. In their letter of 3 December 2012, the Applicant argued that a contribution outside of a computer, but within a network, could be technical. That may be the case, but the question at hand is whether the alleged contribution, in reducing the number of messages exchanged across the network has a *technical effect* on the communication *process* outside the computer.

29   The invention changes the way data is selected and packaged for transmission as messages. The effect of reduced network traffic arises because fewer

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[6] *Vodafone BL O/097/11*
[7] Kapur v Comptroller [2008] EWHC 649 (Pat)
[8] *AT&T Knowledge Ventures' Application and CVON Innovations Ltd's Application* [2009] FSR 19 para. 40
[9] *Really Virtual Co Ltd v UK Intellectual Property Office [2012]* EWHC 1086 (Ch).
[10] *HTC v Apple [2013] EWCA Civ 451*
[11] *Symbian at para. 52*

messages are exchanged due to the structure of the synchronisation request and response, and its programmatic implementation. The reduction of the number of messages exchanged is effected inside the computer. Less bandwidth is consumed because fewer messages are exchanged, but this does not constitute a change to the technical characteristic of the network or communication process outside the computer; the technical constraints and characteristics, e.g. the bandwidth of the network are the same. The contribution does not therefore have a *technical effect* on a process outside the computer, and so the signpost is not satisfied.

30   Signpost (ii) was not explicitly considered by the Examiner or the Applicant, but I will consider it briefly in light of my comments about a method for doing business:

> (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*

31   I stated above, in paragraph 25, that the contribution is defined in terms of data processing and not by the nature of the data in each dataclass being synchronised. The contribution is enabled by the provision in a single request of a separate sync mode for each of multiple data classes. In other words the claimed technical effect relies upon sync mode data being processed in accordance with the claimed invention. With regard to signpost (ii) then, the 'data being processed' is the sync mode data and the effect produced is entirely dependent upon it being processed in a single request comprising a separate sync mode for each of multiple data classes. The second signpost then also contra-indicates a technical contribution.

32   Signpost (iii) was addressed briefly by the Examiner in his Examination Report of 12 October 2012. The Applicant has no provided a response to this argument:

> (iii)   *whether the claimed technical effect results in the computer being made to operate in a new way*

33   The computer operates in accordance with the program, as the Examiner argued. The way synchronisation is performed may be new, but the operation of the computer itself is unchanged.

34   Signpost (iv) was discussed in the Applicant's letter of 3 December 2012:

> (iv)   *whether there is an increase in the speed or reliability of the computer; whether it runs more efficiently and effectively*[12]

35   The Applicant argued that as fewer messages need to be exchanged, a computer implementing the invention could reach a conclusion or certain point

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[12] This wording reflects the comments of Lewison LJ in *HTC v Apple [2013] EWCA Civ 451* where he reconsidered the original wording

in processing more quickly, thus providing an increase in the speed of the computer.

36   The program implements a synchronisation protocol which packages data so as to reduce the number of messages exchanged. To my mind this enables an increase in the speed of the synchronisation transaction as a result of the way the computer is programmed. However the speed and reliability of the computer itself are unchanged. All that has changed is the number and format of the messages transmitted. Similar reasoning applies in respect of the reliability, efficiency and effectiveness of the computer. While changes to the synchronisation protocol enable improvements in recovery when a transaction is interrupted, the computer itself is no less susceptible to interruption. While the format of messages and anchor logic may permit recovery from interruption, the operation of the computer itself is no more efficient or effective.

37   Finally, I turn to signpost (v):

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

38   The Applicant argued that the perceived problem of network congestion or the requirement for efficient bandwidth usage is overcome by way of fewer messages being exchanged. The Applicant's argument implies that this is at no cost to functionality and therefore the problem is solved rather than circumvented.

39   Tackling the problem of insufficient capacity or bandwidth by sending less messages is not the same as increasing the capacity or bandwidth of the network. The former feels like treating the symptom rather than the cause. The problem may become less apparent but that is surely because it is circumvented by sending less traffic? The programmatic implementation of the synchronisation protocol reduces the number of messages exchanged and may thereby circumvent bandwidth constraints, but it does not change and therefore overcome the technical characteristic or constraints of the network. I consider this signpost too to be answered in the negative.

Technical contribution

40   I have found that the five signposts indicate that the contribution falls solely within the excluded subject matter as a program for a computer as such, and do not support the alleged contribution being technical in nature. In their letter of 3 December, the Applicant argued that the reduced usage of available wireless bandwidth and hence more efficient use of that bandwidth is a technical innovation. In being stated without reference to a computer, they argue, the technical innovation resides outside of the "computer" or implementing device. As I have found above, the contribution resides solely within the program for a computer, and in as much as the advantage takes effect outside the computer, within a network, is not technical. The computer is programmed to send fewer messages. Once 'outside' the computer, the advantages of fewer messages become apparent in terms of reduced bandwidth usage, but the technical characteristic of the network and

communication process outside the computer are unchanged and so there is no technical contribution. This reasoning is consistent with previous office decisions which have considered whether a reduction in network traffic is 'technical'. For example, in *NTT*[13] the hearing officer concluded that not transmitting non-musical data to a computer which is to generate a playlist does not amount to a technical contribution. In other words, transmitting less data is not technical.

41   In *NTT* the hearing officer considered the non-transmission of data to avoid rather than solve the problem of limited bandwidth, which is consistent with my finding above.

42   I have found that the contribution falls solely within excluded subject matter, and does not provide a relevant technical effect. The contribution is not technical in nature because it does not provide a contribution in a non-excluded field, or overcome a technical problem. I have found that the invention does not provide the required technical contribution to satisfy section 1(2).

Conclusion

43   In the light of my findings above, I conclude that the invention as claimed is excluded under section 1(2) because it relates solely to excluded matter; namely a program for a computer as such.

44   Having read the application I do not think that any saving amendment is possible. I therefore refuse the application under section 18(3).

Appeal

45   Any appeal must be lodged within 28 days.

Ben Buchanan

Deputy Director, acting for the Comptroller

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[13] NTT Communications Corporation BL O/195/05