PATENTS ACT 1977

APPLICANT	Intuwave Limited
ISSUE	Whether patent application GB 2 385 441 A relates to a patentable invention
HEARING OFFICER	Stephen Probert

DECISION

1   This decision is about whether Intuwave Limited should be granted a patent for a particular invention. The examiner has objected that the invention is a program for a computer as such, but Intuwave Limited insists that it involves a technical contribution and is more than a program for a computer as such. The patent application has an earliest filing date of 22nd October 2001.

2   Because the applicant and the examiner could not agree, a hearing took place before me on 7th April 2006. The applicant was represented by Mr Peter Langley of Origin Limited, their Patent Attorney. The examiner also attended in case I needed any assistance from him.

The Invention

3   The invention relates to an application programming environment in a mobile telephone. The mobile telephone is said to be "resource constrained"; which means, in simple terms, that it has a limited amount of memory, and limited battery life.

4   Like most computers and computer-based devices, mobile phones usually have a small amount of program code stored in a Read-Only Memory (ROM). This code is "burnt" into the ROM during the manufacturing process and is not intended to be changed. Because of the immutability of code burnt into a ROM, the amount of program code stored in this way might be quite small — sometimes no more than a "bootstrap" program that enables the processor to load a larger operating system from a more flexible (re-writeable) memory. Alternatively, in some devices the entire operating system may be burnt into a ROM.

5   Whereas the very earliest mobile telephones were only designed to make and receive telephone calls, in recent years it has become common practice to run

a wide range of other applications on mobile telephones. Examples given in the description of the patent application include a web server, WAP server and OBEX server. The invention in this application is all about being able to design such applications for mobile telephones. More specifically, it concerns a runtime library comprising three types of code which enable a wide range of different applications to be constructed. These three types of code form what is described as a "restricted set of mandatory primitives" that are capable of being combined with additional code (called "glue logic") to create different applications. These primitives occupy very little code space, and this means that any primitives that are common to several applications can be burnt to ROM.

6	Mr Langley submitted that the idea of burning these primitives into ROM is a very unusual thing to do. He described it as "counter-intuitive", adding that most people would store this sort of program code in Flash memory because it is readily available in the mobile telephone, and because it is possible to update the code 'over-the-air'. On the other hand, according to Mr Langley, the advantage of storing an application programming environment in ROM is that new applications written for that environment can run more quickly and hence power efficiently than applications using resources in other kinds of memory, eg. Flash memory.

The Claims

7	There is only one independent claim in the application at present. It reads as follows:

> 1.	A mobile telephone when programmed with a runtime library comprising three types of code which enable a system to be modelled, the three types of code being:
>
> (a)	a first re-useable object which defines the transmission of raw binary data between 2 ends;
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> (b)	a second re-useable object which defines ordered name/value pairs and
>
> (c)	an abstract API definition that defines how to write, create, call or use a task which handles the first and/or second objects;
>
> characterised in that these three types of code form a restricted set of mandatory primitives that are capable of being combined with additional code to create part or all of several different applications, with any communication between components of these applications only occurring using these primitives, with the additional code being implemented as re-useable tasks;
> and the re-useable objects and the additional code implemented as re-useable tasks are burnt to ROM in the mobile telephone, to result in a mobile telephone with an application programming environment that is compact and power efficient.

The Law

8   The examiner has reported that the application relates to 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.**

9   Mr Langley very helpfully set out his understanding of how this section of the Act should be approached in an outline argument that I received in advance of the hearing. He quotes the following paragraph (para 186) from Mr Justice Pumfrey's judgment in *RiM v Inpro* [1]:

> "186. It is now settled, at least at this level, that the right approach to the exclusions can be stated as follows. **Taking the claims correctly construed, what does the claimed invention contribute to the art outside excluded subject matter?** The test is a case-by-case test, and little or no benefit is to be gained by drawing analogies with other cases decided on different facts in relation to different inventions. RIM says that the point does not require elaboration. It contends that all that is claimed, as a matter of substance, is a collection of programs for computers. I think this is wrong. What the claims give is a technical effect: computers running faster and transmitting information more efficiently, albeit ultimately for the purpose of displaying part of that information."
>
> (My emphasis)

10   Although I have emphasised the second sentence, I should in all fairness point out that in his outline argument presented to me, Mr Langley emphasised the last sentence. Nevertheless, it is absolutely clear to me that the crucial test is the one that I have indicated. Pumfrey J may have found that there was a technical effect in the case before him, but for the reasons he gives earlier in the same paragraph, there is little or no benefit to be gained by drawing analogies between this invention and the invention in *RiM v Inpro*.

Applying the test

11   Mr Langley says that the contribution this invention makes to the art is a better

[1] *Research In Motion UK Ltd v Inpro Licensing* [2006] EWHC 70 (Pat)

mobile telephone — one that will run applications more power efficiently and hence have a longer battery life than a conventional mobile telephone using a Flash-based application programming environment and running those same applications. He argued that because this advance has a technical nature (not merely or exclusively relating to computer programs, but instead leading to a more power efficient mobile telephone), the Section 1(2) exclusion does not apply.

12   Alternatively, Mr Langley suggested that extending the battery life of mobile telephones is a technical problem. Therefore, since the invention solves this technical problem using technical means, the advance has a technical character and consequently (again) the Section 1(2) exclusion does not apply.

13   I have two major problems with both of these suggestions. Firstly, to the extent that the invention described in this application leads to a more power efficient mobile telephone, it does so because a larger proportion of the application programming environment is stored in a ROM device instead of a Flash memory. But as Mr Langley himself admitted at the hearing, this is already well known. In his words:

> "The high-end phones that have agendas and applications and mapping applications, all that kind of stuff, all those phones that actually require any kind of sophisticated operating system base, the operating system itself is burnt to ROM. And they do that because on a mobile phone there are really really stringent demands for power efficiency. It's like the single greatest challenge that faces the designers at Symbian is to basically write code that runs really really power efficiently. And the only way you can do that is to actually burn it to ROM."

14   While the program code representing the operating system would generally be stored in ROM according to Mr Langley, it would not normally be practical to use ROM to store the higher-level, application program code; either because the code is not available early enough in the manufacturing process, or because it is preferable to store it in Flash memory so that it can be more easily updated and/or upgraded during the lifetime of the mobile phone.

15   What Mr Langley described as the inventor's 'insight' is that it is possible to use the ROM, but it is only practical if you can identify a very small, restricted set of primitives that can fit into the ROM. So the real substance of the invention is the recognition that a restricted set of mandatory primitives, comprising three types of code, can be used to create several different applications by combining them with additional code (glue logic). As Mann J observed in *Macrossan*[2] (para 33):

> "The claim contains a reference to other elements, but it is the substance that matters, rather than a technical dissection of the claim."

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[2] *Neal William Macrossan's Application* [2006] EWHC 705 (Ch)

16   Consequently, returning to the test set out in paragraph 9 above, when the claim is properly construed, what the claimed invention contributes to the art is a new way of writing computer programs that results in more compact code. It may well be the case that if the resulting code is sufficiently compacted, it then becomes practical to store it in ROM so that the gains associated with storing program code in ROM (as opposed to Flash memory) can be realised. But this latter effect, which Mr Langley argued was a technical effect according to Pumfrey J in *RiM v Inpro* [3], is not itself the contribution to the art because it was previously known.

17   I said that I had two major problems with Mr Langley's case. The second is much harder to articulate, so I shall use an analogy to help me to express it. If you create an 'alphabet' out of three types of character (vowels, consonants and numerals), it is possible to use that alphabet to express a wide range of thoughts and ideas, especially if you are also permitted to combine those three types of character with other symbols (eg. spaces and punctuation symbols). But I have actually explained this concept in very general terms, and for example, I haven't told you that the vowels could be A, E, I, O & U. Neither have I given you any guidance as to what the consonants should look like, how they should be pronounced, or even how many there should be. The contribution I have made concerns how to go about creating an alphabet that could be a more efficient writing system than one based on hieroglyphics. Even if I were to provide some examples of alphabets that conform to my model, it does not necessarily follow that every alphabet comprising three types of character will lead to a more efficient and compact writing system. But more importantly, what I have 'invented' is not an alphabet, but a system or a model for creating alphabets.

18   Coming back to the present application, what the claimed invention contributes to the art is not a new runtime library that has specific technical advantages, but a method or a philosophy for writing a computer program (or several computer programs) such that the resulting program code should have one particular advantage — ie. it *should* occupy less space in memory. In other words, the application does not say "here is a runtime library of program code that you can use to create a whole range of applications". It simply says, if I am reading the specification as a whole correctly, that if you write your program in a certain way, parts of the program (at least) will be small enough to locate in ROM.

19   Whichever way I look at it, the contribution to the art that is made by the invention described and claimed in this application is entirely within excluded subject matter — ie. programs for computers as such.

Conclusion

20   I have decided that the substance of the invention in this application is a new way of writing a computer program, and computer programs as such are

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[3] Paragraph 186, final sentence

excluded from patentability by section 1(2). I have read the whole application carefully, and I cannot see any amendment that would overcome this deficiency. Consequently I refuse this application under section 18 on the grounds that it does not satisfy the requirements of section 1.

Appeal

21   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