



PATENTS ACT 1977

APPLICANT Dell Products L.P.

ISSUE Whether patent application numbers GB
0524300.1 and GB 0712055.3 comply
with section 1(1)(b)

HEARING OFFICER B Micklewright

DECISION

Introduction

- 1 Patent application GB 0524300.1 (“the parent application”), published as GB 2420954 A, was filed on 29 November 2005 claiming priority from an earlier US patent application dated 1 December 2004 (“the priority date”). On 21 June 2007 patent application GB 0712055.3 (“the divisional application”), published as GB 2437432 A, was lodged, claiming divisional status from the parent application and thus having the same filing date and priority date as the parent application.
- 2 The examiner argued in his first examination report that the invention claimed in the parent application lacked novelty and inventive step. Several rounds of amendment and argument followed. Amendments made to the claims overcame the novelty objection but the examiner maintained that the invention as claimed in the amended claims lacked an inventive step. The applicant disagreed and requested a hearing.
- 3 The examiner also objected to the invention claimed in the divisional application, arguing initially that it lacked novelty and inventive step. Several rounds of argument and amendment followed. Finally the examiner maintained that the invention as claimed in the amended claims lacked an inventive step and, due to an issue with the way one of the independent claims was amended to overcome the novelty citation, also lacked novelty. The applicant once again disagreed and requested a hearing.
- 4 The matters in relation to both the parent and divisional applications therefore came before me at a hearing on 26 November 2008 in which the applicant was represented by Mr. Steven Howe of the patent attorney firm Reddie & Grose. The examiner, Dr. John Cullen, attended for the Office.

- 5 The day before the hearing the applicant proposed various further amendments to the claims of both the parent and divisional applications in the form of Main Requests and Auxiliary Requests and requested that these be considered at the hearing. The independent claims filed as the Main Requests corresponded to those considered by the examiner during prosecution of the case with the exception of an attempt by the agent to amend one of the independent claims (claim 5) of the divisional application to overcome the novelty objection. These Main Requests and Auxiliary Requests formed the basis of discussions at the hearing and this Decision is based on these forms of the claims. Claim numbers in this Decision refer to claim numbers in these requests. The examiner made further observations at the hearing in the light of these requests and referred to documents not previously cited. I therefore gave the applicant two weeks from the date of receipt of these documents in which to make written comments on the examiner's observations and documents. These written observations were received on 12 December 2008.
- 6 At the hearing Mr. Howe said that he would be happy to make any necessary further amendments to resolve the novelty issue with the divisional application should I find for the applicant on the substantive inventive step issue in relation to the divisional application. I will therefore not consider this matter any further in this Decision and, should I find for the applicant on the inventive step issue, will if necessary remit the divisional application back to the examiner for a resolution of this matter.

The inventions

- 7 The inventions claimed in both the parent and divisional applications relate to a router which has wireless local area network (LAN) components and cellular wireless wide area network (WAN) components so that information can be communicated over both the wireless LAN and the cellular WAN.

The parent application

- 8 Independent claims 1, 5 and 9 of the Main Request of the parent application specify that the router includes a detachable wireless cellular that enables communication with the cellular WAN when connected to the router and enables voice communication when detached from the router.
- 9 The Auxiliary Request submitted the day before the hearing added a further feature to these claims, incorporating the features of dependent claims 5, 8 and 12 of the Main Request into independent claims 1, 5 and 11 of the Auxiliary Request respectively. In the claims of this request a SIM in the detachable cellular includes a SIM which is selected from one of a plurality of SIMs.
- 10 Claim 1 reads, with the extra feature of the auxiliary request in italics and square brackets:
1. An information handling system network comprising:
plural information handling systems, each information handling system having processing components to process information and wireless local area network

components operable to communicate information over a wireless local area network; and a router having wireless local area network components and wireless cellular wide area network components, the wireless local area network components operable to communicate information over the wireless local area network with the plural information handling systems, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network, the router routing information between one or more of the information handling systems and the wireless cellular wide area network, wherein the router wireless cellular wide area network components comprise a detachable wireless cellular transceiver that enables the wireless cellular wide area network when coupled to the router and enables wireless cellular voice communication when detached from the router

[, in which the detachable wireless cellular transceiver includes one of a plurality of SIMs, each including user authorisation information and arranged such that the authorisation information from the selected one of the plurality of SIMs is provided to manage communication of information by the router according to the authorisation information].

The divisional application

- 11 In the divisional application, the router of independent claims 1, 5 and 9 of the Main Request includes a VoIP (Voice over Internet Protocol) module which supports communication of voice information between the wireless LAN and the cellular WAN.
- 12 Two auxiliary requests were submitted in relation to the divisional application. The first of these incorporates a Quality of Service (QoS) module, previously claimed in dependent claim 4, into each of the independent claims. The second Auxiliary Request incorporates claims 6 and 7 into each of the independent claims and corresponds to the additional features included in the Auxiliary Request of the parent application.
- 13 Claim 1 reads, with the extra feature of the first auxiliary request in italics and the extra feature of the second auxiliary request underlined (note that claim 1 of the second auxiliary request does not include the italicised text of the first auxiliary request):
 1. An information handling system network comprising:
 - plural information handling systems, each information handling system having processing components to process information and wireless local area network components operable to communicate information over a wireless local area network;
 - a VoIP telephone having wireless local area network components operable to communicate voice information over the wireless local area network;
 - a router having wireless local area network components and wireless cellular wide area network components, the wireless local area network components operable to communicate information over the wireless local area network with the plural information handling systems, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network and suitable for use in a wireless cellular telephone or a wireless cellular card, the wireless cellular wide area network components include a detachable security module having authorization information that enables the wireless cellular wide area network components to communicate with the cellular wide area network when the security module couples to the wireless cellular, the router routing information between one or more of the information handling systems and the wireless cellular wide area network, the router having a VoIP module interfaced with the wireless local area network and wireless cellular wide area network components, the VoIP module operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network

[, the router further comprising a quality of service module interfaced with the wireless local area network components and the wireless cellular wide area network components, the quality of service module operable to route information between the wide area and local area networks according to quality of service tags associated with the information].

{, wherein the detachable security module is one of a plurality of GSM compatible wireless cellular SIMs, each including user authorization information, arranged such that the authorization information from the selected SIM is provided to manage communication of information by the router according to the authorization information.}

- 14 All the independent claims of the main requests and auxiliary requests of the parent and divisional applications are found in an Annex to this Decision.

The law

- 15 Section 1(1) of the Patents Act 1977 (“the Act”) states:

1.-(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –

(a) the invention is new;

(b) it involves an inventive step;

(c) it is capable of industrial application;

(d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;

and references in this Act to a patentable invention shall be construed accordingly.

- 16 Section 3 of the Act states:

3. An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

- 17 In *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 49, the Court of Appeal formulated a four-step approach for assessing whether an invention is obvious to a person skilled in the art. This approach was restated and elaborated upon by the Court of Appeal in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588 where Jacob LJ reformulated the *Windsurfing* approach as follows:

(1)(a) Identify the notional “person skilled in the art”.

(1)(b) Identify the common general knowledge of that person.

- (2) Identify the inventive concept of the claim in question or if that cannot be readily done, construe it.
- (3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or claim as construed.
- (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?

18 In assessing whether the inventions claimed in the parent and divisional applications involve an inventive step, I will therefore use this *Windsurfing/Pozzoli* approach.

Arguments and analysis

19 Mr. Howe did not initially contest at the hearing analysis set out by the examiner in his various letters and reports in relation to steps (1)(a), (1)(b) and (2) of the *Windsurfing/Pozzoli* approach. At the hearing it however emerged that there was some disagreement between the examiner and Mr. Howe on some aspects of the common general knowledge, particularly in relation to the inventions claimed in some of the auxiliary requests. The examiner supplied documentary evidence at the hearing and I gave Mr. Howe an opportunity to make written submissions on this matter following the hearing. He provided observations on these matters in a letter dated 11 December 2008. I will consider steps (1)(a) and (1)(b) for the parent and divisional applications together but will then consider steps (2), (3) and (4) for separately for each of the various main and auxiliary requests of the parent and divisional applications.

Step (1)(a): Identify the notional person skilled in the art

20 In letters to the applicant dated 27 October 2008 the examiner stated that he considered the skilled person to be a team comprising at least a person skilled in the art of designing wireless LAN routers and a person skilled in the art of cellular WAN communications systems, with a particular interest in providing access to internet networks using this technology. Mr. Howe did not contest this and I agree with the examiner’s assessment.

Step (1)(b): Identify the common general knowledge of that person

21 In letters dated 27 October 2008 the examiner set out his view of the common general knowledge of the person skilled in the art at the priority date in relation to what at the hearing were presented as the main requests on the parent and divisional applications. He argued that it was common general knowledge that the vast majority of mobile phones operated on cellular WAN networks such as GSM or GPRS, and were provided with detachable SIMs to control access to the network. It was also common general knowledge, he argued, that a mobile phone

acting as a detachable wireless cellular transceiver could be used with a laptop or PC to provide wireless internet access via a cellular network. The examiner also commented that routers with USB ports were commercially available prior to the priority date of the applications in suit. In relation to the divisional application, the examiner contended that VoIP wireless LAN phones were commercially available prior to the priority date, and that the market for such devices was predicted to expand rapidly, citing documentary evidence to support this contention. The agent did not dispute any of these arguments and I agree that all these features were part of the common general knowledge of the person skilled in the art at the priority date of the applications in suit.

22 The examiner referred to the document WO 00/10357 (HAUMANT), published 24 February 2000, as support that Quality of Service (QoS) tags were well known in cellular networks. Mr. Howe did not contradict this but pointed out that in this document only QoS in relation to the internet, real time traffic, and voice transmission was discussed. It did not disclose the use of a QoS module in connection with a VoIP module in a router. Mr. Howe is correct in this but this document does make it clear in its discussion of the background of the invention that QoS parameters are standard in at least GPRS systems. I therefore conclude that the use of QoS parameters in cellular networks would have been part of the common general knowledge of the person skilled in the art at the priority date.

23 After reading the auxiliary requests submitted by the applicant the day before the hearing, the examiner also contended that the following features were also part of the common general knowledge of the person skilled in the art at the priority date:

A. The concept of transmitting VoIP over cellular networks.

B. The use of QoS in VoIP systems.

24 He referred to several documents in support of each of these contentions. Mr. Howe, in his letter of 11 December 2008, disputed these contentions and argued that these documents did not demonstrate that these features were common general knowledge. Mr. Howe highlighted the distinction between what is disclosed in a prior art document and disclosure which constitutes common general knowledge. This is an important point. In my analysis of the documents cited by the examiner I will look carefully for evidence in the documents as to whether, on the balance of probabilities, the relevant disclosure would have been considered part of the common general knowledge of the person skilled in the art at the priority date.

A. The concept of transmitting VoIP over cellular networks

25 The examiner cited four documents in support of his contention that the concept of transmitting VoIP over cellular networks was well known prior to the priority date of the inventions. These are:

DA1: Wanjiun Liao and Jen-Chi Liu, "VoIP Mobility in IP / Cellular Network Interworking", IEEE Communications Magazine, April 2000.

DA2: US 6751207 (LEE), published 15 June 2004

DA3: WO 01/98863 (MOTOROLA), published 27 December 2001

DA4: GB 2402027 (HUTCHINSON), published 24 November 2004

26 These documents clearly demonstrate that it was at least well known to create hybrid cellular and IP networks so that cellular handsets could communicate with VoIP handsets and vice-versa. In documents DA1 and DA2 it appears that the voice communication which is transmitted over the cellular part of the network is standard cellular voice communication with the mobile base station converting this to VoIP communication data for transmission over the internet, although I note that in DA1 handset 108 of Figure 1 is allocated an IP address.

27 DA3 relates to uplink access by GSM/EDGE mobile stations engaged in VoIP packet transfer. Page 1 lines 28-32 state:

“Efforts are presently underway to further develop the European Telecommunications Standards Institute (ETSI) GPRS and EDGE specifications to support the wireline concept of voice over Internet protocol (VoIP). This effort includes the ability for a mobile station to terminate and originate a VoIP call as an endpoint on the Internet.”

28 This follows a discussion of the use of GPRS or EDGE networks for other types of data transmission such as for email or internet browsing. The document goes on in page 2 to discuss the problems caused by the real-time nature of VoIP data and then proposes a solution. The passage quoted above and the subsequent discussion in my view implies that in 2001 the desire to send VoIP packets over a cellular wireless WAN was well known in the industry, the problems were understood, and work was underway to solve these problems. The invention disclosed subsequently in DA3 is one such proposed solution. I note that these problems relate to ensuring that the reliability and efficiency of using VoIP over cellular networks is improved. They do not in themselves prevent VoIP being used over cellular networks in principle.

29 DA4 relates to the use of VoIP sessions on a 3G network, in particular to the problem that additional headers on VoIP-related packets cause to low bandwidth or bandwidth sensitive links, and comments that the allocation of resources is critical to system capacity for wireless networks. The first sentence of the document, under the heading “Background”, reads:

“The invention was developed specifically in respect to the need to support Voice over IP sessions on a 3G cellular radio network ...”

I have read this document and believe that the authors considered the “need” referred to above to be a well known need in the industry. They list, in the discussion of the prior art, alternative prior art solutions to the problem in hand.

30 Mr. Howe argued that at the priority date the transmission of VoIP signals over a wireless wide WAN would not be contemplated because of the more limited bandwidth available on such networks. This, Mr. Howe argued, would be the

common view. The documents cited by the examiner, he argued, related to possibilities in technical documents rather than commercial realities and a person skilled in the art would only conduct a search of such technical documents to determine whether anyone had suggested the possibility of departing from this conventional understanding with the hindsight of seeing the present invention.

- 31 I disagree with Mr. Howe's view. The latter two documents discussed above in particular in my view demonstrate that the concept of transmission of VoIP packets on cellular wireless WANs was part of the person skilled in the art's conventional understanding and would have been part of their common general knowledge at the priority date.

B. The use of QoS in VoIP systems

- 32 The examiner cited four documents in support of his contention that the use of Quality of Service (QoS) in VoIP systems was well known prior to the priority date of the invention. These are:

DB1: RFC 3611 "RTP Control Protocol Extended Reports (RTCP XR)", November 2003, Friedman et al.

DB2: US 2003/0227907 (CHOI), published 11 December 2003

DB3: EP 1471701 (AT&T), published 27 October 2004

DB4: US 2004/0105404 (FUJIWARA), published 3 June 2004

These documents all disclose the application of QoS to VoIP systems and indicate that such usage was common in the art of internet telephony. Indeed DB1 relates to a standards specification for the internet community. Mr. Howe argued that what is disclosed in these documents, although known, was not part of the common general knowledge at the priority date, commenting that these documents were published very shortly before the priority date. He also argued that DB1 was merely a discussion and suggestion document. Having read these documents my view is that the context in which these documents discuss QoS parameters (or "tags") with VoIP demonstrate on balance that the use of QoS parameters to control the level of service on a network for VoIP telephony would have been sufficiently well known to be considered part of the common general knowledge of the person skilled in the art. Documents DB2 and DB3 also disclose routers with QoS and VoIP functionality. I conclude that this would have been reasonably well known to the person skilled in the art at the priority date, but there is not sufficient evidence in these documents to demonstrate that this would have been part of their common general knowledge.

Steps (2), (3) and (4)

- 33 I will consider steps (2), (3) and (4) separately for each of the main requests and, if necessary, the auxiliary requests in the parent and divisional applications.

Parent application: Main Request

Step (2): Identify the inventive concept of the claim in question or if that cannot be readily done, construe it

- 34 The examiner identified the inventive concept of the main request of the parent application as a router which includes wireless LAN components for communicating locally with local information handling systems and a detachable wireless cellular transceiver which, when coupled to the router, connects it to a wireless WAN, and, when detached, is able to operate independently to enable voice communication. Mr. Howe accepted this identification of the inventive concept and I also agree with it.

Step (3): Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or claim as construed

- 35 The examiner cited the following document as the closest piece of prior art:

D1: WO 2004/070970 A1 (TOP GLOBAL), published 19 August 2004

- 36 D1 discloses a mobile wireless bridge, i.e. a router, between a wireless LAN, a wireless WAN and one other WAN. It is thus able to switch between WANs if one WAN becomes unavailable or unreliable. In the main embodiment the wireless WAN is a cellular network. D1 does not disclose the use of a detachable cellular transceiver. Instead the bridge as illustrated in Figure 3 includes a wireless WAN module which may for example be a GPRS or 3G module. There is no indication or implication that this module could be detachable or that, if detached, it could be used independently for voice communication. This therefore constitutes a difference between the cited prior art and the inventive concept of the main request. D1 does however disclose the use of a SIM in the bridge to authenticate the bridge on the cellular network.

Step (4): Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?

- 37 The person skilled in the art would, as part of their common general knowledge, be aware that a detachable cellular transceiver (a mobile phone) can be attached to a computer (such as a laptop computer) to enable the computer to access the internet over a cellular network. They would also be aware that routers could have USB ports. But, on the basis of the evidence before me, it would not necessarily be part of their common general knowledge that mobile phones could be plugged into routers to provide internet access via the router over a cellular network.

- 38 The question that then arises is whether it would have been obvious to the person skilled in the art at the priority date to replace the wireless WAN module in the bridge of D1 with a detachable cellular transceiver which when detached independently enables voice communication. Mr. Howe argued that the purpose of the wireless bridge disclosed in D1 is to ensure that access to a wide area

network is always available and therefore a person considering the teaching in this document would find no motivation for detaching or removing the wireless WAN module from the bridge. To do so would go entirely against the teaching of the document. Moreover, even if a person were to remove the wireless WAN module from the bridge, Mr. Howe argued that it would not have been obvious to add the further components needed to enable independent voice communication. The examiner however argued that the relevant modification to the bridge of D1 was merely a workshop variation with the advantages of reducing the complexity and cost of the router disclosed in D1 and was thus obvious.

- 39 The bridge of D1 includes functionality which enables a LAN client to access the internet via either a wired WAN or a wireless WAN. In the preferred embodiment the bridge would normally prioritise use of the wired WAN. If however the wired WAN is not available or becomes unavailable, possibly due to disconnection, failure, unreliability and/or remoteness, the bridge then uses the wireless WAN. This could according to D1 for example include use in a vehicle where no wired WAN is available, or in a location where no wired access is available. It may also be used for load balancing. The system is designed so that any transition from the wired WAN to the wireless WAN has minimal impact on the LAN clients. Mr. Howe said that the system of D1 aimed at providing uninterrupted network coverage. This is not quite what the document says but nevertheless D1 clearly aims to minimise disruption to LAN clients and the connectivity to a wireless WAN is an important aspect of the system. Nowhere in D1 is it suggested that the components of the bridge which provide access to the wireless WAN are in some way detachable. The only element that could be detachable is the SIM itself.
- 40 So D1 does not teach or suggest a router with a detachable wireless WAN module. Moreover there is some strength to Mr. Howe's argument that the document in fact teaches away from such a system, as it aims to switch connection from a wired WAN to a wireless WAN in a manner which involves as little disruption as possible. It would be difficult to achieve this by removing the built-in wireless transceiver and instead requiring a user to plug in their mobile phone. That said, there is a shared purpose between the system of D1 and the system of plugging a mobile phone into a laptop in order to access the internet, namely to provide access to the internet when no wired WAN is available, albeit that the system of D1 also has a broader purpose.
- 41 I have to come to my decision based only on the evidence put before me, in terms of the state of the art at the priority date of the application and in terms of what would be part of the person skilled in the art's common general knowledge at that date. Based on that evidence, and viewed without any knowledge of the claimed invention, it would not in my view have been obvious to the person skilled in the art to take the router disclosed in D1 and replace its wireless WAN module with a detachable wireless cellular transceiver which, when detached from the router, was usable for wireless cellular voice communication when disconnected from the router. To do so would have involved a significant change to the design, functionality and purpose of the bridge of D1. I do not believe it would have been obvious for the skilled person at the priority date to have made such changes.
- 42 There is however an argument in relation to inventive step that was not

considered by the examiner prior to the hearing and was not therefore discussed at the hearing. I have found that it would have been part of the common general knowledge of the person skilled in the art at the priority date to access the internet over a cellular WAN using a cellular telephone plugged into a laptop computer. Operating system software such as Microsoft Windows™ had built into it prior to the priority date functionality that enabled a computer with an internet connection to share that internet connection. See for example http://www.practicallynetworked.com/sharing/xp_ics/ or <http://www.practicallynetworked.com/sharing/sharing.htm>, both of which indicate that this functionality was built into Windows XP™ and earlier versions of Windows. It is possible that a computer sharing an internet connection in this way could be considered to be acting as a router. Further searching may be necessary to enable full consideration of this point. I will therefore refer the case back to the examiner for consideration of these matters and their relationship to the novelty and inventiveness of the claims of the Main Request of the parent application. The examiner should also ensure that the claims are clear and supported.

- 43 The Auxiliary Request of the parent application corresponds to Auxiliary Request 2 of the divisional application. I will consider the substance of this Request in my discussion of the divisional application.

Divisional application: Main Request

Step (2): Identify the inventive concept of the claim in question or if that cannot be readily done, construe it

- 44 The inventive concept of the Main Request of the divisional application relates to a router with wireless LAN components for communicating over a wireless LAN and wireless cellular WAN components for communicating over a wireless cellular WAN, the wireless cellular WAN components including a detachable security module (such as a SIM) having authorisation information to enable communication over the wireless cellular WAN, the router having a VoIP module which supports the communication of voice information between the wireless LAN and wireless cellular WAN. This corresponds in substance to the examiner's identification of the inventive concept and Mr. Howe did not dispute this identification. There are however no details disclosed in the application as to how the VoIP module supports the communication of voice information between the two networks. According to the claim a VoIP telephone is used to communicate voice information over the wireless LAN. VoIP data is transmitted over an IP network in the same way as standard IP data. The VoIP module could convert the VoIP data to standard voice data for transmission over the cellular network or alternatively it could carry out some function that ensures real-time processing of IP packets. For the purposes of construction I consider the expression "the VoIP module operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network" of claim 1 to include both these possibilities and any other possibility.

Step (3): Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or claim as construed

45 The allegation of obviousness of the invention claimed in the parent application is based on the same document as that in the parent application, namely:

D1: WO 2004/070970 A1 (TOP GLOBAL)

46 There was some debate between the examiner and Mr. Howe as to whether D1 discloses a router with a VoIP module. There are two key statements in the document which make reference to voice communication. These are:

- Paragraph 2 of page 5 where it states that “Examples of LAN clients include ... and mobile telephones among others”.
- Paragraph 1 of page 9 where it states: “In addition to providing LAN clients access to WANs for data communications, MWBs [mobile wireless bridges] may be equipped with modules that support voice, video, and other types of communication as well”.

47 The question that arises is whether or not these paragraphs implicitly refer to VoIP. The examiner argued that the reference to a “mobile telephone” could not refer to a cellular telephone as such telephones do not operate on LANs but rather on wireless cellular WANs. Mr. Howe however argued that such telephones were often equipped with Bluetooth™ or even infra red technology and this could be to what paragraph 2 of page 5 of D1 was referring. Today, of course, cellular telephones can have WI-FI™ capability, but no evidence was put before me that this was the case in 2004 before the priority date, and in any case a cellular telephone using WI-FI on a wireless LAN is likely to be using VoIP technology. I find Mr. Howe’s interpretation unlikely. It is more plausible that the “mobile telephone” would be considered by the person skilled in the art as a reference to a VoIP telephone, particularly as VoIP technology was part of the common general knowledge at the priority date of the invention. Similarly the module which could support voice referred to in paragraph 1 of page 9 would also be more likely than not to be considered a VoIP module by the person skilled in the art at the priority date. I cannot however rule out the possibility that it is not a VoIP module and I therefore conclude that a VoIP module is not implicitly disclosed in D1. The VoIP module of the present invention therefore constitutes a difference between D1 and the inventive concept of the claim. There are no other differences between D1 and the inventive concept.

Step (4): Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?

48 VoIP services in general were part of the common general knowledge of the person skilled in the art at the priority date. It was also common general knowledge to use a VoIP-enabled device (e.g. a phone or a computer) as a LAN client in a wireless LAN and thus for wireless routers to be able to handle VoIP, including, to the extent necessary, specialist software and/or hardware.

- 49 In accordance with the two paragraphs referred to above, D1 discloses the use of some form of voice module in the bridge, presumably, although not necessarily, for use by the “mobile telephone” LAN client. There are no further details of the “voice module” disclosed in D1. I have found that the concept of transmitting VoIP packets on cellular wireless WANs was part of the person skilled in the art’s common general knowledge at the priority date and, as I have mentioned above, consider that it is more likely than not that the person skilled in the art would immediately consider the “voice module” of D1 to be a VoIP module. I therefore consider it to have been obvious to the person skilled in the art at the priority date that the “voice module” of D1 be a VoIP module. It is of course possible that a VoIP module is used only with the wired WAN connected to the bridge but this seems to go against the key teaching of D1 that switching between the wired WAN and the wireless WAN involves as little disruption as possible to LAN clients. I therefore conclude that the “voice module” of D1 is used with both the wired WAN and the wireless WAN. I have referred above to two possible functions a VoIP module could have. Both are disclosed in documents DA1-DA4 discussed above and in my view both are obvious possible functions of the “voice module” of D1 and, for that matter, the VoIP module of the application in suit.
- 50 The divisional application also does not disclose any functional details of the VoIP module of claim 1 except that it in some sense “supports” or “manages” communication of voice information between the wireless LAN and the wireless cellular WAN. There can therefore be no inventive step in how the VoIP module of the present invention supports or manages the routing of IP packets. As the only difference between D1 and the invention disclosed in the independent claims of the divisional application is the presence of this VoIP module, and as I have found that it would have been obvious to the person skilled in the art at the priority date to have included a VoIP module in the bridge of D1, I therefore conclude that these claims lack an inventive step. I note further that even had I not reached this conclusion based on this argument, the document EP 1471701 cited as DB3 above discloses a router with a VoIP module. In the light of the disclosure in this document it would also have been obvious at the priority date to include such functionality into the router of D1. The features of the dependent claims are also either disclosed in D1 or relate to one of the auxiliary requests. The inventiveness of these claims will be covered by my discussion of the auxiliary requests below.

Divisional application: Auxiliary Request 1

Step (2): Identify the inventive concept of the claim in question or if that cannot be readily done, construe it

- 51 The inventive concept of Auxiliary Request 1 includes all the features of that of the main request but adds to the router a quality of service (QoS) module which routes information between the WAN and LAN according to QoS tags associated with the information.

Step (3): Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or

claim as construed

- 52 The most relevant piece of prior art is once again document D1. I have already found that D1 does not disclose a router with a VoIP module. D1 also does not disclose the QoS features of the independent claims of Auxiliary Request 1.

Step (4): Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?

- 53 I have found that it would have been part of the common general knowledge of the person skilled in the art at the priority date of the application in suit to use QoS tags in relation to VoIP data. I have also already concluded that the claims of the Main Request lack an inventive step. Moreover in my view it would be clear to the person skilled in the art that in order to use VoIP in the router of D1, it would be necessary to ensure that there was a sufficient quality of service for VoIP to operate effectively. I therefore consider it obvious to the person skilled in the art to make use of QoS tags in the router of D1 so as to ensure that there was sufficient QoS for the VoIP services. It is thus obvious to include in the bridge disclosed in D1 a VoIP module and a QoS module which routes information between the wireless LAN and wireless WAN according to QoS tags associated with that information. The independent claims of Auxiliary Request 1 therefore lack an inventive step. Similar to the Main Request, I note further that even had I not reached this conclusion based on this argument, the document EP 1471701 cited as DB3 above discloses a router with a VoIP module and a QoS module which controls the service level of VoIP communications. In the light of the disclosure in this document it would also have been obvious at the priority date to include such functionality into the router of D1. The dependent claims relate either to features standard in the art or to features included in the independent claims of Auxiliary Request 2, considered below. I will consider below whether a combination of the QoS module of Auxiliary Request 1 and the SIM arrangement of Auxiliary Request 2, as is claimed in claim 5 of Auxiliary Request 1, involves an inventive step.

Divisional application: Auxiliary Request 2

Step (2): Identify the inventive concept of the claim in question or if that cannot be readily done, construe it

- 54 The inventive concept of Auxiliary Request 2 includes all the features of that of the Main Request but defines the detachable security module to be one of a plurality of SIMs, each including user authorisation information.
- 55 The limitation of the security module to a SIM adds little to claim 1. The fact that this is one of a plurality of SIMs, each with user authorization information also appears to add little to claim 1 in its current wording. The only limitation that it makes is that there is more than one SIM in existence which can perform the required function, one of which is chosen.

56 It became clear at the hearing however that the applicant intended the words used in Auxiliary Request 2 to mean more than this, namely that each user would have their own SIM and this would not only authorise them to access the network but would also control the terms of that access. For example this could include limiting access time or data, or restricting which websites could be accessed by that user. The only support for this in the application as filed is be found in page 8 lines 14 to 26, where it is stated (emphasis mine):

“Optionally, different users of a wireless local area network for a premise may thus selectively authorize wireless cellular wide area network access by insertion of a SIM profile associated with a user *to provide varying degrees of service or access according to the identity of the user*. When not using the wireless wide area network, the user removes the SIM or the wireless cellular device that provides authorization, making the wireless cellular device available for mobile use.”

57 The application does not include any further details in relation to this matter. Although as presently worded I cannot construe claim 1 as providing varying degrees of service or access according to the identity of the user, I will also consider whether the addition of this feature into claim 1 would constitute an inventive step based on the evidence before me.

Step (3): Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or claim as construed

The most relevant piece of prior art is once again document D1. I have already found that D1 does not disclose a router with a VoIP module. It does however disclose the use of the SIM for an authentication purpose, stating on page 8 that the mobile wireless bridge (MWB) includes “SIM Card module 320, which is responsible for authenticating MWB 300 as a mobile client in WWAN network system”. Claim 1 of Auxiliary Request 2 states that “the authorization information from the selected SIM is provided to manage communication of information by the router according to the authorization information” which falls within the functionality of the SIM in D1 and is therefore not a difference between D1 and the inventive concept of the claim. The feature of providing varying degrees of service or access according to the identity of the user is not explicitly disclosed in D1. This is however a standard feature of SIMs. SIMs provide access to services on a cellular network in dependence upon the conditions set out for example in a contract between the SIM provider and the user. For example some users could have unlimited minutes or texts as part of their contract whereas another might have to pay further after a specified limit of minutes, texts or internet access has been exceeded. Access for pay-as-you-go users is dependent upon available credit. Although Mr. Howe’s description of this feature at the hearing went beyond standard uses of SIMs, I do not believe there is any support in the application as filed for anything that goes beyond this standard usage. A standard SIM has the features disclosed in the paragraph I have quoted above and these features are therefore implicitly disclosed in D1. This feature therefore also does not constitute a difference between the disclosure of D1 and the inventive concept.

Step (4): Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?

- 58 I have already concluded in relation to the Main Request that it would be obvious to include in the router of D1 a VoIP module. The feature of using a SIM which is one of a plurality of SIMs does not in my view limit claim 1, as use of any SIM, including that of D1, satisfies this requirement. There are therefore no further differences between the independent claims of Auxiliary Request 2 as currently worded and D1 and these claims therefore lack an inventive step. Moreover even if claim 1 of Auxiliary Request 2 was amended to include this feature as clarified by Mr. Howe at the hearing the claims would still not provide an inventive step over D1 as the addition proposed at the hearing does not have sufficient support in the application as filed to distinguish the SIM arrangement from that disclosed in D1. The dependent claims relate to features disclosed in D1 except for the feature of claim 4 which relates to the QoS module of Auxiliary Request 1. As I have found that the SIM arrangement disclosed in the divisional application as filed is not distinguished from that of D1, claim 4 also lacks an inventive step for those reasons set out above in relation to Auxiliary Request 1 of the divisional application. Similarly claim 5 of Auxiliary Request 1 lacks an inventive step. All the independent and dependent claims of the various Requests made in relation to the divisional application therefore lack an inventive step.

Auxiliary Request of the parent application

- 59 I will return now briefly to the Auxiliary Request of the parent application. If, after consideration of the new argument I have referred to in paragraph 42, the examiner concludes that the independent claims lack novelty or an inventive step, the amendment proposed in the Auxiliary Request of the parent application will not overcome the objection.

Conclusion

The parent application GB 0524300.1

- 60 In conclusion I have found that on the basis of the evidence put before me and the arguments made prior to and at the hearing the claims of the parent application in their current form (which constitute the “Main Request” of the parent application) involve an inventive step over document D1. I have however identified a new argument in relation to novelty and inventive step which has not previously been considered either by the examiner or by Mr. Howe and which may require the examiner to carry out some further searching. I therefore remit the parent application back to the examiner for consideration of the argument set out in paragraph 42. If the examiner concludes on the basis of this argument that the independent claims of the parent application lack novelty or inventive step, I have found that the amendment as set out in the Auxiliary Request of the parent application will not rectify the matter.

The divisional application GB 0712055.3

- 61 I have found that the claims of the divisional application in their current form (which constitute the “Main Request” of the divisional application) do not involve an inventive step. Moreover neither of the amendments proposed in Auxiliary Request 1 or Auxiliary Request 2 rectify the matter. The claims as proposed to be amended still do not involve an inventive step. I therefore refuse the divisional application.

Appeal

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

B MICKLEWRIGHT

Deputy Director acting for the Comptroller

Annex – Independent claims of the Main and Auxiliary Requests for the parent and divisional applications

A. Independent claims of the Main Request for the parent application

1. An information handling system network comprising:
 - plural information handling systems, each information handling system having processing components to process information and wireless local area network components operable to communicate information over a wireless local area network; and
 - a router having wireless local area network components and wireless cellular wide area network components, the wireless local area network components operable to communicate information over the wireless local area network with the plural information handling systems, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network, the router routing information between one or more of the information handling systems and the wireless cellular wide area network, wherein the router wireless cellular wide area network components comprise a detachable wireless cellular transceiver that enables the wireless cellular wide area network when coupled to the router and enables wireless cellular voice communication when detached from the router.

6. A method of networking information handling systems, the method comprising:
 - communicating information between an information handling system and a router over a wireless local area network;
 - communicating information with the router over a wireless cellular wide area network, the router including a detachable wireless cellular transceiver that enables the wireless cellular wide area network when the wireless cellular is coupled to the router, and enables wireless cellular voice communication when detached from the router; and
 - communicating at least some of the information between the wireless local area network and the wireless cellular wide area network with the router.

11. An information handling system router comprising:
 - a housing;
 - a wireless local area network engine disposed in the housing and operable to route information between plural information handling systems over a wireless local area network;
 - a wireless cellular wide area network engine comprising a detachable wireless cellular transceiver, the wireless cellular transceiver operable to communicate information between a wireless cellular wide area network and the wireless local area network engine when coupled to the router and operable to perform voice communication when detached from the router; and
 - a control module interfaced with the wireless local area network engine and the wireless cellular wide area network, the control module operable to route information between the information handling systems and the wireless cellular wide area network.

B. Independent claims of the Auxiliary Request for the parent application

1. An information handling system network comprising:
 - plural information handling systems, each information handling system having processing components to process information and wireless local area network components operable to communicate information over a wireless local area network; and
 - a router having wireless local area network components and wireless cellular wide area network components, the wireless local area network components operable to communicate information over the wireless local area network with the plural information handling systems, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network, the router routing information between one or more of the information handling systems and the wireless cellular wide area network, wherein the router wireless cellular wide area network components comprise a detachable wireless cellular transceiver that enables the wireless cellular wide area network when coupled to the router and enables wireless cellular voice

communication when detached from the router, in which the detachable wireless cellular transceiver includes one of a plurality of SIMs, each including user authorisation information and arranged such that the authorisation information from the selected one of the plurality of SIMs is provided to manage communication of information by the router according to the authorisation information.

5. A method of networking information handling systems, the method comprising:
communicating information between an information handling system and a router over a wireless local area network;
communicating information with the router over a wireless cellular wide area network;
providing a detachable wireless cellular transceiver;
providing a plurality of SIMs, each including user authorization information, a selected one of the SIMs being provided with the detachable wireless cellular transceiver and arranged such that the authorisation information from the selected one of the plurality of SIMs is provided to manage communication of information by the router according to the authorisation information, the coupled wireless cellular transceiver enabling the wireless cellular wide area network when the wireless cellular is coupled to the router, and enabling wireless cellular voice communication when detached from the router; and
communicating at least some of the information between the wireless local area network and the wireless cellular wide area network with the router.

9. An information handling system router comprising:
a housing;
a wireless local area network engine disposed in the housing and operable to route information between plural information handling systems over a wireless local area network;
a wireless cellular wide area network engine comprising a detachable wireless cellular transceiver, the wireless cellular transceiver operable to communicate information between a wireless cellular wide area network and the wireless local area network engine when coupled to the router and operable to perform voice communication when detached from the router; and
a control module interfaced with the wireless local area network engine and the wireless cellular wide area network, the control module operable to route information between the information handling systems and the wireless cellular wide area network.

C. Independent claims for the Main Request for the divisional application

1. An information handling system network comprising:
plural information handling systems, each information handling system having processing components to process information and wireless local area network components operable to communicate information over a wireless local area network;
a VoIP telephone having wireless local area network components operable to communicate voice information over the wireless local area network;
a router having wireless local area network components and wireless cellular wide area network components, the wireless local area network components operable to communicate information over the wireless local area network with the plural information handling systems, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network and suitable for use in a wireless cellular telephone or a wireless cellular card, the wireless cellular wide area network components include a detachable security module having authorization information that enables the wireless cellular wide area network components to communicate with the cellular wide area network when the security module couples to the wireless cellular, the router routing information between one or more of the information handling systems and the wireless cellular wide area network, the router having a VoIP module interfaced with the wireless local area network and wireless cellular wide area network components, the VoIP module operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network.

5. A method of networking information handling systems, the method comprising:
communication information between an information handling system and a router over a wireless local area network;
communicating information with the router over a wireless cellular wide area network using wireless cellular wide area network components, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network and suitable for use in a wireless cellular telephone or a wireless cellular card;
communicating at least some of the information between the wireless local area network and the wireless cellular wide area network with the router, wherein communicating at least some of the information between the wireless local area and the wireless cellular wide area network with the router further comprises communicating VoIP information, in which a detachable security module having authorization information is provided, the detachable security module enabling the router to communicate with the wireless cellular wide area network when the security module is coupled to the router, and enables a wireless cellular to communicate with the wireless cellular wide area network when the security module is coupled to the wireless cellular.
9. An information handling system router comprising:
a housing;
a wireless local area network engine disposed in the housing and operable to route information between plural information handling systems over a wireless local area network;
a wireless cellular wide area network engine disposed in the housing and operable to communicate information between a wireless cellular wide area network and the wireless local area network engine, the wireless cellular wide area network components being suitable for use in a wireless cellular telephone or a wireless cellular card, and
a detachable security module having authorization information that enables the wireless cellular wide area network components to communicate with the wireless cellular wide area network when the security module couples to the router and that enables a wireless cellular to communicate the cellular wide area network when the security module couples to the wireless cellular;
a control module interfaced with the wireless local area network engine and the wireless cellular wide area network, the control module operable to route information between the information handling systems and the wireless cellular wide area network; and
a VoIP module interfaced with the wireless local area network and wireless cellular wide area network components and operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network.

D. Independent claims for the First Auxiliary Request for the divisional application

1. An information handling system network comprising:
plural information handling systems, each information handling system having processing components to process information and wireless local area network components operable to communicate information over a wireless local area network;
a VoIP telephone having wireless local area network components operable to communicate voice information over the wireless local area network;
a router having wireless local area network components and wireless cellular wide area network components, the wireless local area network components operable to communicate information over the wireless local area network with the plural information handling systems, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network and suitable for use in a wireless cellular telephone or a wireless cellular card, the wireless cellular wide area network components include a detachable security module having authorization information that enables the wireless cellular wide area network components to communicate with the cellular wide area network when the security module couples to the

wireless cellular, the router routing information between one or more of the information handling systems and the wireless cellular wide area network, the router having a VoIP module interfaced with the wireless local area network and wireless cellular wide area network components, the VoIP module operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network, the router further comprising a quality of service module interfaced with the wireless local area network components and the wireless cellular wide area network components, the quality of service module operable to route information between the wide area and local area networks according to quality of service tags associated with the information.

4. A method of networking information handling systems, the method comprising:
 - communication information between an information handling system and a router over a wireless local area network;
 - communicating information with the router over a wireless cellular wide area network using wireless cellular wide area network components, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network and suitable for use in a wireless cellular telephone or a wireless cellular card;
 - communicating at least some of the information between the wireless local area network and the wireless cellular wide area network with the router, wherein communicating at least some of the information between the wireless local area and the wireless cellular wide area network with the router further comprises communicating VoIP information, and wherein information is routed between the wide area and local area networks according to quality of service tags associated with the information,
 - in which a detachable security module having authorization information is provided, the detachable security module enabling the router to communicate with the wireless cellular wide area network when the security module is coupled to the router, and enables a wireless cellular to communicate with the wireless cellular wide area network when the security module is coupled to the wireless cellular.

8. An information handling system router comprising:
 - a housing;
 - a wireless local area network engine disposed in the housing and operable to route information between plural information handling systems over a wireless local area network;
 - a wireless cellular wide area network engine disposed in the housing and operable to communicate information between a wireless cellular wide area network and the wireless local area network engine, the wireless cellular wide area network components being suitable for use in a wireless cellular telephone or a wireless cellular card, and
 - a detachable security module having authorization information that enables the wireless cellular wide area network components to communicate with the wireless cellular wide area network when the security module couples to the router and that enables a wireless cellular to communicate the cellular wide area network when the security module couples to the wireless cellular;
 - a control module interfaced with the wireless local area network engine and the wireless cellular wide area network, the control module operable to route information between the information handling systems and the wireless cellular wide area network;
 - a VoIP module interfaced with the wireless local area network and wireless cellular wide area network components and operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network; and
 - a quality of service module interfaced with the wireless local area network components and the wireless cellular wide area network components, the quality of service module operable to route information between the wide area and local area networks according to quality of service tags associated with the information.

E. Independent claims for the Second Auxiliary Request for the divisional application.

1. An information handling system network comprising:
plural information handling systems, each information handling system having processing components to process information and wireless local area network components operable to communicate information over a wireless local area network;
a VoIP telephone having wireless local area network components operable to communicate voice information over the wireless local area network;
a router having wireless local area network components and wireless cellular wide area network components, the wireless local area network components operable to communicate information over the wireless local area network with the plural information handling systems, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network and suitable for use in a wireless cellular telephone or a wireless cellular card, the wireless cellular wide area network components include a detachable security module having authorization information that enables the wireless cellular wide area network components to communicate with the cellular wide area network when the security module couples to the wireless cellular, the router routing information between one or more of the information handling systems and the wireless cellular wide area network, the router having a VoIP module interfaced with the wireless local area network and wireless cellular wide area network components, the VoIP module operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network, wherein the detachable security module is one of a plurality of GSM compatible wireless cellular SIMs, each including user authorization information, arranged such that the authorization information from the selected SIM is provided to manage communication of information by the router according to the authorization information.

5. A method of networking information handling systems, the method comprising:
communication information between an information handling system and a router over a wireless local area network;
communicating information with the router over a wireless cellular wide area network using wireless cellular wide area network components, the wireless cellular wide area network components operable to communicate information over a wireless cellular wide area network and suitable for use in a wireless cellular telephone or a wireless cellular card;
communicating at least some of the information between the wireless local area network and the wireless cellular wide area network with the router, wherein communicating at least some of the information between the wireless local area and the wireless cellular wide area network with the router further comprises communicating VoIP information, in which a detachable security module having authorization information is provided, the detachable security module enabling the router to communicate with the wireless cellular wide area network when the security module is coupled to the router, and enables a wireless cellular to communicate with the wireless cellular wide area network when the security module is coupled to the wireless cellular, wherein the detachable security module is one of a plurality of GSM compatible wireless cellular SIMs, each SIM having authorization information associated with one or more predetermined users, the method further comprising:
communicating user authorization information from the SIM when the SIM connects to the router; and
using the authorization information to enable access by a wireless cellular transceiver integrated with the router to the wireless cellular network, including managing communication of information by the router according to the authorization information.

7. An information handling system router comprising:
a housing;
a wireless local area network engine disposed in the housing and operable to route information between plural information handling systems over a wireless local area network;
a wireless cellular wide area network engine disposed in the housing and operable to communicate information between a wireless cellular wide area network and the wireless local area network engine, the wireless cellular wide area network components being

suitable for use in a wireless cellular telephone or a wireless cellular card, and

- a detachable security module having authorization information that enables the wireless cellular wide area network components to communicate with the wireless cellular wide area network when the security module couples to the router and that enables a wireless cellular to communicate the cellular wide area network when the security module couples to the wireless cellular, wherein the detachable security module is one of a plurality of GSM compatible wireless cellular SIMs, each including user authorization information, arranged such that the authorization information from the selected SIM is provided to manage communication of information by the router according to the authorization information;
- a control module interfaced with the wireless local area network engine and the wireless cellular wide area network, the control module operable to route information between the information handling systems and the wireless cellular wide area network; and
- a VoIP module interfaced with the wireless local area network and wireless cellular wide area network components and operable to support communication of voice information between the wireless local area network and the wireless cellular wide area network.