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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM D. LANAHAN, PAUL A. SHERMAN,
and CHESLA C. WECHSLER

Appeal 2007-2622
Application 10/119,159
Technology Center 2100

Decided: January 31, 2008

Before ANITA PELLMAN GROSS, MAHSHID D. SAADAT,
and MARC S. HOFF, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 2, 4-17, and 19-30, which are all of the claims pending in this application, as claims 3 and 18 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants invented a method and system for determining a lease-time of packet-switched data communication network resources that include, but are not limited to, IP addresses and bandwidth. The allocation is based on actual usage history of an individual user, usage of others in a same user-category, and usage history for other users accessing a same network resource management entity, which may also be a network resource owning entity. (Specification 2). An understanding of the invention can be derived from a reading of independent claims 1 and 7 and dependent claim 11, which are reproduced as follows:

1. A method of allocating requested network resources, said method comprising the steps of:

referencing usage history data for a user requesting network resources;

comparing the usage history data for the user with a threshold amount of user history data for the requested network resources; and

allocating the requested network resources in accordance with the reference usage history data for the user if the usage history data satisfies the threshold, or in accordance with average usage history data for a plurality of users of a network resource owning entity if the usage history data does not satisfy the threshold.

7. A method of allocating internet protocol (IP) addresses from a network resource owning entity, said method comprising the steps of:

referencing usage history data on the network resource owning entity for a user requesting an IP address; and

allocating an IP address to the user having a lease-time defined in accordance with the referenced usage history data for the user.

11. The method of Claim 7, wherein, if the referenced usage history data includes less than a threshold amount of usage history data for the user, said step of allocating the IP address includes allocating the IP address in accordance with average usage history data for the network resource owning entity.

The Examiner relies on the following prior art references:

Delp	US 5,996,013	Nov. 30, 1999
Hrastar	US 6,295,298 B1	Sep. 25, 2001
Chellis	US 2002/0120744 A1	Aug. 29, 2002 (filed Feb. 28, 2001)

The rejections as presented by the Examiner are as follows:

Claims 1, 2, 4, 16, 17, and 19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Delp.

Claims 5, 6, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Delp and Hrastar.

Claims 7-15 and 22-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Delp, Hrastar, and Chellis.

Rather than repeat the arguments here, we make reference to the Brief (filed Sep. 22, 2006) and the Answer (mailed Feb. 21, 2007) for the respective positions of Appellants and the Examiner.

We affirm-in-part.

ISSUES

1. Under 35 U.S.C § 102(b), with respect to the appealed claims 1, 2, 4, 16, 17, and 19, does Delp anticipate the claimed subject matter by teaching all of the claimed limitations?
2. Under 35 U.S.C § 103(a), with respect to the appealed claims 5, 6, 20, and 21, would the ordinarily skilled artisan have found it obvious to modify Delp with Hrastar to render the claimed invention unpatentable?
3. Under 35 U.S.C § 103(a), with respect to the appealed claims 7-15 and 22-30, would the ordinarily skilled artisan have found it obvious to modify Delp with Hrastar and Chellis to render the claimed invention unpatentable?

FINDINGS OF FACT

The following findings of fact (FF) are relevant to the issues involved in the appeal and are believed to be supported by a preponderance of the evidence.

1. Appellants' method claim 1 requires allocating the requested network resources

in accordance with the *reference usage history data for the user* if the usage history data satisfies the threshold,

or

in accordance with *average usage history data for a plurality of users of a network resource owning entity* if the usage history data does not satisfy the threshold.

2. Independent claims 7 and 22 recite allocating an IP address in accordance with the referenced usage history data for the user, while dependent claims 11 and 26 require allocating the IP address in accordance with average usage history data for the network resource owning entity if the history data includes less than a threshold amount of usage history data.

3. Delp relates to resource allocation between a plurality of arrival processes from a dedicated resource pool and a shared resource pool. When an arrival process is identified, the resource allocator coupled to a controller obtains a predefined characterizing value for the identified arrival process and allocates resources from one of the dedicated or the shared resource pools to the arrival process in response to the obtained predefined characterizing value resource allocation with guarantees. The controller provides a predefined characterizing value for each of the processes and tracks resource use by incrementing a usage charge for the arrival process when a resource is allocated and decrements the usage charge at the end of use. (Col. 1, ll. 44-67).

4. Delp, as shown in Figure 4A, discloses resource allocation from at least two pools of resources, the dedicated pool 402, the shared pool 404, and a third optional high use or no use pool 406. Each user has at least two predetermined thresholds designated low threshold 410 and high threshold 412, and an optional no use 414 and a use counter 416. The controller compares a user (i) charge N_i with the predetermined low threshold 410 and the high threshold 412 corresponding to this flow and allocates resources to an arriving cell from the dedicated pool 402 if resource use N_i is less than the low threshold 410, from the shared pool 404 if resource use by the

corresponding flow is between the high threshold 412 and the low threshold 410. If the resource use N_i is above the high threshold 412, then the user will be configured to take from the high use or no use pool 406 if the resource is available or alternatively will be denied resources. (Col. 4, ll. 12-37).

5. Delp in Figure 4B provides for another algorithm performed by the controller 104 for allocation of the resource 106. As indicated at decision block 422, resource use N_i by the corresponding flow is compared with a low threshold T_i . If resource use N_i by the corresponding flow is less than the low threshold T_i , resources 106 from the dedicated pool 402 are allocated. Otherwise as indicated at decision block 426, resource use N_i is compared with the portion of the shared resources unused (U) by all flows scaled by the importance factor (F_i). As indicated at block 428, if resource use by the corresponding flow is smaller than the importance factor F_i of the flow times the shared resources unused U , resources 106 from the shared pool 404 are allocated. Otherwise resources from the high use pool or no use 406 are allocated, as indicated at block 428. (Col. 5, ll. 6-31).

6. Delp further discloses another algorithm in Figure 4C wherein at decision block 438, resource use N_i is compared with the low threshold T_i . As indicated at block 440, if resource use N_i is less than the low threshold T_i , resources 106 from the dedicated pool 402 are allocated. Otherwise, all active connections are identified in block 442. As shown in decision block 444, if resource use N_i is smaller than the importance factor F_i of the flow divided by the *importance factors of all active flows*, and multiplied by the total amount of shared resources, resources from the

shared pool are allocated, as indicated at block 446. Otherwise, resources from the high use pool or no use 406 are allocated, as indicated at block 448. (Col. 5, l. 40 through col. 6, l. 6).

7. Delp further discloses that the threshold crossing methods may be used for performance of Internet Protocol (IP), among the resources placed in multiple pools. (Col. 4, ll. 50-59).

8. Hrastar relates to dynamically assigning resources such as IP addresses (col. 15, ll. 64-66), wherein among various techniques, one approach is to ensure that IP addresses that are not being used are deassigned. One technique is the lease mechanism in the DHCP protocol which assigns an IP address only for a limited period of time; if another DHCP protocol renewing the lease is not received from the modem within the limited period of time, the IP address is deassigned. (Col. 17, ll. 15-39).

PRINCIPLES OF LAW

1. Anticipation

A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference. *See In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

Anticipation of a claim requires a finding that the claim at issue reads on a prior art reference. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999) (quoting *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 781 (Fed. Cir. 1985)).

2. Obviousness

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. *See In re Kahn*, 441 F.3d 977, 987-88 (Fed. Cir. 2006), *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991), and *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

The Examiner can satisfy this burden by showing some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (*citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

ANALYSIS

1. 35 U.S.C. § 102 Rejection

Appellants disagree with the Examiner's findings in Delp with respect to the steps of allocating resources based on data for a single user or average data for multiple users since the user charge parameter is associated with a single user (Br. 5). Appellants further argue that the embodiment shown in Figure 4C of Delp also lacks using average usage history data for a plurality of users (Br. 6).

The Examiner relies on Figure 4C of Delp and argues that using the importance factor of all active flows F_i and the fact that " F_i is updated (claim 1), thus it is historical," shows that Delp allocates resources based on the historical data of a plurality of users (Ans. 12). The Examiner further points to Figure 5C of Delp and asserts that it shows historical consideration in applying the disclosed method (*id.*).

Based on our review of Delp, we disagree with the Examiner's characterization of the importance factor F_i in Delp as the claimed usage

history data for a plurality of users. If each arrival process is a user and N_i or user charge is a predefined characterizing value for each of the processes (FF 3), the resource allocation described in Figure 4A relates to the usage data of one user (FF 4). In fact, for each user, the user charge N_i is tracked and updated to reflect usage history data for a user (FF 3), which is compared with two threshold values, resulting in allocation of resources from either a dedicated or a shared pool of resources based on the result of the comparison (*id.*).

In the other embodiments depicted in Figures 4B and 4C, Delp compares the user charge N_i with a low threshold and another value based on an importance value which is scaled by resources unused (FF 5-6). Unused resources value U , although it may ultimately be assigned to other users, contains no historical data related to the average usage of a plurality of users. Similarly, the threshold value obtained by dividing the importance factor F_i for a user by the importance factor F_j of all active flows (FF 6), at best, is merely a ratio of importance factors. While in such calculations, a relation to usage by all other users is implied, the threshold value in box 444 of Figure 4C provides no indication that the obtained value in any way relates to an average usage history for a plurality of the users applied to the resource allocation decisions.

Therefore, as argued by Appellants (Br. 5), the thresholds and allocation decisions in Delp do not indicate that the resources are allocated in accordance with the average usage history data for a plurality of users if the usage history data does not satisfy the threshold, as recited in independent claims 1 and 16. Under the facts we have here and the

arguments presented by the Examiner and Appellants and as described above, we have concluded that a prima facie case of anticipation has not been established. Accordingly, the 35 U.S.C. § 102 rejection of claims 1, 2, 4, 16, 17, and 19 as anticipated by Delp cannot be sustained.

2. 35 U.S.C. § 103 Rejection

Claims 5, 6, 20, and 21

With respect to the rejection of claims 5, 6, 20, and 21, we note that the Examiner further relies on Hrastar for teaching the Internet Protocol (IP) addresses as one type of the resources that are assigned to the users (Ans. 4-5). However, the Examiner has not identified any teachings in Hrastar related to resource allocation in accordance with average usage history data for a plurality of users to overcome the deficiencies of Delp discussed above. Thus, we do not sustain the 35 U.S.C. § 103 rejection of claims 5, 6, 20, and 21 over Delp and Hrastar.

Claims 7-15 and 22-30

With respect to claims 7 and 22, Appellants argue that Delp does not teach allocation of IP addresses (Br. 19-20 and 28-29). Appellants further assert that while Hrastar teaches allocation of IP addresses, it does not teach or suggest allocation of IP addresses in accordance with usage history data for a user (*id.*). The Examiner appears to read the claimed “allocating a resource in accordance with the referenced usage history data for a user” on Delp’s allocation of resources in accordance with the user charge value and its comparison with a threshold (Ans. 6). The Examiner further asserts that Hrastar’s IP address having a lease-time is a kind of resource that is allocated by Delp while Chellis provides for a mechanism for adjusting the

amount of time if the number of available IP addresses is less than a threshold (Ans. 6-7).

As discussed above with respect to claim 1, Delp teaches allocating resources based on whether the user charge value N_i meets a threshold, which includes a historical component since the charge value is tracked and updated as the resources are used (FF 3). We also find that Delp suggests applying the threshold crossing approach to performance and control of IP addresses (FF 7). Similarly, the Examiner properly relies on Hrastar for teaching the lease-time as defined according to other received lease requests and consistent with the usage history data of the user in Delp. We also agree with the Examiner's rationale in combining the prior art references and find that one of ordinary skill in the art faced with the resource allocation problem would have applied the process of Delp to Hrastar's IP addresses having a lease-time which may be adjusted based on the number of available IP addresses, as disclosed by Chellis.¹

However, we observe that dependent claims 11 and 26 further require allocating the IP address in accordance with average usage history data for the network resource owning entity if the history data includes less than a threshold amount of usage history data (FF 2). As discussed above with respect to claim 1, Delp does not disclose that any average usage history data is relied on for allocating the resources. We further find no teachings in the other applied references that would have provided the missing feature and overcome the deficiency of Delp. Therefore, we sustain the 35 U.S.C.

¹ Although Chellis is applied in the rejection of claims 7 and 22, it appears that its teachings are more applicable to claims 9 and 24, dependent upon claims 7 and 22, respectively (Ans. 7 and 10).

§ 103 rejection of claims 7-10 and 22-25 over Delp, Hrastar, and Chellis, but not of claims 11 and 26, as well as claims 12-15 and 27-30 dependent thereon.

CONCLUSION

On the record before us, Appellants have failed to show that the Examiner has erred in rejecting claims 7-10 and 22-25. However, we found error in the Examiner's rejection of claims 1, 2, 4-6, 11-15, 16, 17, 19-21, and 26-30. In view of our analysis above, we sustain the 35 U.S.C. § 103 rejection of claims 7-10 and 22-25. However, we do not sustain the 35 U.S.C. § 102 rejection of claims 1, 2, 4, 16, 17, and 19 and the 35 U.S.C. § 103 rejections of claims 5, 6, 11-15, 20, 21, and 26-30.

DECISION

The decision of the Examiner rejecting the claims is reversed with respect to claims 1, 2, 4-6, 11-17, 19-21, and 26-30, but affirmed with respect to claims 7-10 and 22-25.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

tdl/gw

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Application 10/119,159

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