UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

CIVIL ACTION NO. 16-11613-RGS

EGENERA, INC.

v.

CISCO SYSTEMS, INC.

MEMORANDUM AND ORDER ON
INVENTORSHIP

December 3, 2018

STEARNS, D.J.

A central dispute in the parties' dispositive motions is whether Peter Schulter is an inventor of the asserted '430 patent. The salient events are as follows.

Schulter joined Egenera on October 2, 2000. On April 20, 2001, Egenera submitted to the United Statement Patent and Trademark Office (PTO) the provisional application to which the '430 patent claims priority, listing Schulter amongst its eleven inventors. The utility application was subsequently filed on January 4, 2002, and the '430 patent issued in due course on June 12, 2007. Egenera instituted this patent infringement action against Cisco in August of 2016, identifying Schulter as an inventor of the

'430 patent in its initial and supplemental disclosures in March, May, and June of 2017.

In April of 2017, Cisco petitioned the Patent Trial and Appeal Board (PTAB) for *inter partes* review (IPR) of the '430 patent, contending, *inter alia*, that certain claims of the '430 patent are obvious in view of prior art (including a patent (Grosner) with a priority date of November 2, 2000). On August 16, 2017, Egenera responded to the IPR petition, arguing, in part, that Grosner did not constitute prior art because the '430 patent was earlier conceived. (The '430 patent is governed by the first-to-invent rules predating the America Invents Act.) In support, Egenera relied on a document entitled "Egenera Interframe I/O Architecture," dated September 29, 2000, and authored by inventor Max Smith, which according to Egenera, fully described the patented invention.

The Interframe I/O Architecture document precedes Schulter's employment by Egenera. On September 11, 2017, Egenera petitioned the PTO to remove Schulter as an inventor of the '430 patent. In support, Egenera offered a declaration signed by Schulter on August 15, 2017, stating that he was erroneously named as an inventor. The remaining ten inventors also declared that they either agreed with or did not disagree with Schulter's removal. The PTAB denied institution of the IPR on November 13, 2017,

without making any finding as to the priority of the '430 patent. On January 15, 2018, the PTO approved Egenera's petition to remove Schulter as an inventor.

Cisco contends that Schulter is an inventor of the '430 patent, and that his exclusion invalidates the patent. *See Checkpoint Sys., Inc. v. All-Tag Sec. S.A.*, 412 F.3d 1331, 1338 (Fed. Cir. 2005) ("If nonjoinder of an actual inventor is proved by clear and convincing evidence, a patent is rendered invalid."), quoting *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1349 (Fed. Cir. 1998) (citation omitted in *Checkpoint*). (While not at issue for the purposes of this opinion, Cisco also alleges that Egenera submitted false affidavits to remove Schulter in order to antedate critical prior art and avoid invalidation before the PTAB.) For its part, Egenera maintains that Schulter was innocently misnamed as an inventor on the '430 patent applications, that it realized the error in the process of responding to the IPR petition and has since corrected it, and that further, should Schulter now prove to be a bona-fide inventor, the remedy is correction, not invalidation. *See id*. ("If a patentee can demonstrate that inventorship can be corrected as provided by [35 U.S.C. § 256], a district court must order correction of the patent, thus saving it from being rendered invalid."), *quoting Pannu*, 155 F.3d at 1350.

Putting aside allegations of inequitable conduct, the court agrees with Cisco as a threshold matter that Egenera may not now seek to restore Schulter as an inventor to rectify any nonjoinder. Under 35 U.S.C. § 256, a certificate of correction may issue "[w]henever . . . through error an inventor is not named in an issued patent . . . ." While as a general rule correction of inventorship is liberally permitted, *see Coleman v. Dines*, 754 F.2d 353, 357 (Fed. Cir. 1985), the circumstances here are constrained by the doctrine of judicial estoppel. "The doctrine of judicial estoppel prevents a party from asserting a claim in a legal proceeding that is inconsistent with a claim taken by that party in a previous proceeding." *New Hampshire v. Maine*, 532 U.S. 742, 749 (2001), quoting 18 Moore's Federal Practice § 134.30 (3d ed. 2000).

> [S]everal factors typically inform the decision whether to apply the doctrine in a particular case: First, a party's later position must be "clearly inconsistent" with its earlier position. Second, courts regularly inquire whether the party has succeeded in persuading a court to accept that party's earlier position, so that judicial acceptance of an inconsistent position in a later proceeding would create "the perception that either the first or the second court was misled[.]" . . . A third consideration is whether the party seeking to assert an inconsistent position would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped.

Id. at 750-751 (citations omitted). Egenera's suggestion that Schulter may be relisted as an inventor as circumstances may dictate is "clearly inconsistent" with its September 2017 petition to the PTO, submitted with

affidavits from Schulter and the ten remaining inventors, that Schulter's name was erroneously listed. The PTO accepted these representations, and in January of 2018, granted Egenera's petition to modify the inventorship. As is clear from the chronology, *supra*, disavowing Schulter enabled Egenera to advance an earlier priority date before the PTAB (Egenera could not have plausibly asserted a priority date prior to a joint inventor's hire date). Having persuaded the PTO that Schulter is not an inventor of the '430 patent, Egenera cannot now resurrect his inventorship.[1] *See Yeda Research and Dev. Co. v. Imclone Sys. Inc.*, 443 F. Supp. 2d 570, 623-624 (S.D.N.Y. 2006) (Having persuaded the PTO that a certain figure disclosed a certain claim element in obtaining the patent, "[the court] will not permit defendants to argue now that their assertions to the PTO were incorrect.").

[1] Egenera's petition to remove Schulter as an inventor, sustained by Schulter's and the inventor affidavits, is also a considered act that is unlikely to qualify as an omission "through error" under section 256. *See Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 967 F. Supp. 867, 871 (E.D. Va. 1997) ("[E]rror" is not specially defined in the context of section 256, and is commonly understood to mean "an act involving an *unintentional* deviation from truth or accuracy" and "an act that through *ignorance, deficiency, or accident* departs from or fails to achieve what should be done."), quoting Webster's Third International Dictionary Unabridged, at 772 (1993) (emphasis added).

Turning to the substance of the dispute, "[i]nventorship is a question of law." *Vapor Point LLC v. Moorhead*, 832 F.3d 1343, 1348 (Fed. Cir. 2016).

> Conception is the touchstone of inventorship, the completion of the mental part of invention. It is "the formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice." Conception is complete only when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation.

Burroughs Wellcome Co. v. Barr Labs., Inc., 40 F.3d 1223, 1227-1228 (Fed. Cir. 1994) (citations omitted).

> The conceived invention must include every feature of the subject matter claimed in the patent. Nevertheless, for the conception of a joint invention, each of the joint inventors need not "make the same type or amount of contribution" to the invention. Rather, each needs to perform only a part of the task which produces the invention. On the other hand, one does not qualify as a joint inventor by merely assisting the actual inventor after conception of the claimed invention. One who simply provides the inventor with well-known principles or explains the state of the art without ever having "a firm and definite idea" of the claimed combination as a whole does not qualify as a joint inventor. . . . Furthermore, a co-inventor need not make a contribution to every claim of a patent. A contribution to one claim is enough. Thus, the critical question for joint conception is who conceived, as that term is used in the patent law, the subject matter of the claims at issue.

Ethicon, Inc. v. U.S. Surgical Corp., 135 F.3d 1456, 1460 (Fed. Cir. 1998) (citations omitted). "Because [conception] is a mental act, courts require

corroborating evidence of a contemporaneous disclosure that would enable one skilled in the art to make the invention." *Burroughs Wellcome*, 40 F.3d at 1228.

Cisco contends that Schulter conceived the virtual LAN proxy. The virtual LAN proxy is not itself a claim element of the '430 patent, however, it is one of the structures underlying the claim term "logic to modify said received messages to transmit said modified messages to the external communication network and to the external storage network."[2] *See Winbond Elecs. Corp. v. Int'l Trade Comm'n*, 262 F.3d 1363, 1372 (Fed. Cir.), *opinion corrected on unrelated grounds*, 275 F.3d 1344 (Fed. Cir. 2001) ("The contributor of any disclosed means of a means-plus-function claim element is a joint inventor as to that claim."), quoting *Ethicon*, 135 F.3d at 1463. Cisco identifies an Egenera document entitled "Interframe Network Architecture" as containing the earliest reference to the virtual LAN proxy. The Interframe Network Architecture document, authored singly by

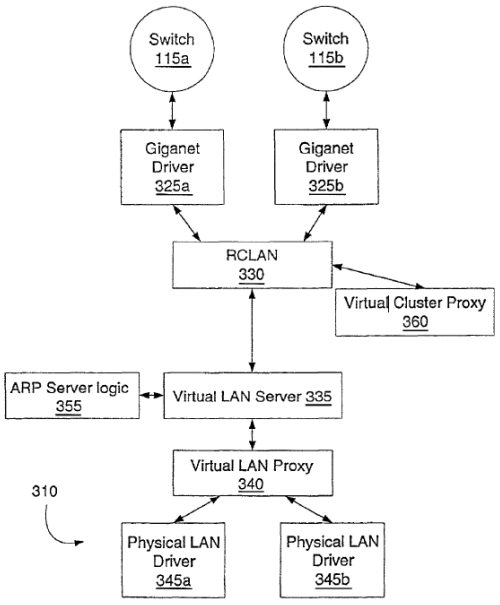
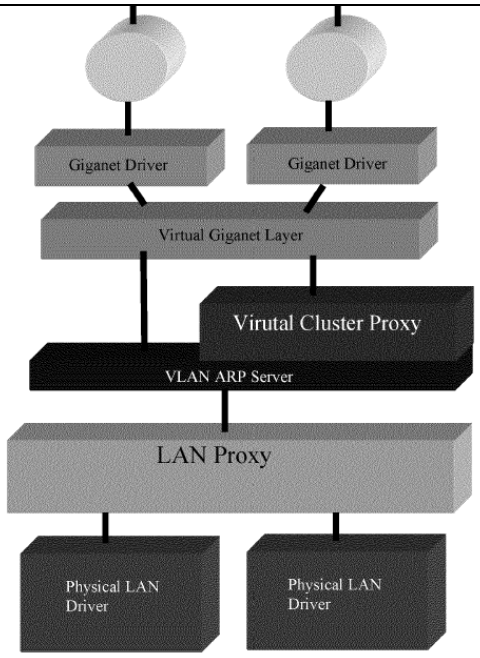
[2] In its claim construction order, the court determined that the "logic to . . ." terms of the '430 patent were means-plus-function elements subject to analysis under 35 U.S.C. § 112, para. 6. *See* Dkt # 80 at 10-18. The structures that perform the modification and transmission functions for messages to the external communication network are "virtual LAN server 335, virtual LAN proxy 430, and physical LAN driver 345" and equivalents. *Id.* at 19.

Schulter, was created on October 9, 2000, and subsequently revised on October 17 and November 7, 2000. *See* Cisco Ex. 45 (Dkt # 154-45) at EGENERA01836866. Cisco points out that that the specification of the '430 patent retains almost verbatim much of Schulter's original description of the virtual LAN proxy. The similarities are highlighted below.

'430 Patent	**Interframe Network Architecture**
Virtual LAN Proxy The virtual LAN Proxy **430** performs the basic coordination of the physical network resources among all the processors that have virtual interfaces to the external physical network **125.** It bridges virtual LAN server **335** to the external network **125.** When the external network **125** is running in filtered mode the Virtual LAN Proxy **430** will convert the internal virtual MAC addresses from each node to the single external MAC assigned to the system **100.** When the external network **125** is operating in unfiltered mode no such MAC translation is required. The Virtual LAN Proxy **430** also performs insertion and removal of IEEE 802.lQ Virtual LAN ID tagging information, and demultiplexing packets based on their VLAN Ids. It also serializes access to the physical Ethernet interface **129** and co-ordinates the allocation and removal	5.2 The LAN Proxy The LAN Proxy performs the basic co-ordination of the physical network resources among all the application processors that have virtual interfaces to the physical network. It's primary function is to bridge the internal VLANs to the external network by converting MAC addresses between those of the internal (Giganet based MACs) and the external (Gigabit Ethernet MAC). It will also serialize access to the physical device through a transmission queue, and co-ordinate the allocation and removal of MAC addresses, especially multicast addresses, on the physical network device. For packets arriving from the outside world, it will work along with the packet filter to move packets to the appropriate ARP server for relay to the correct internal node(s). When the LAN Proxy receives *any* outgoing ARP packet from a VLAN

of MAC addresses, such as multicast addresses, on the physical network. When the external network **125** is running in filtered mode and the virtual LAN Proxy **430** receives outgoing packets (ARP or otherwise) from a virtual LAN server **335,** it replace [sic] the internal format MAC address with the MAC address of the physical Ethernet device **129** as the source MAC address. When the External Network **125** is running in unfiltered mode no such replacement is required. When the virtual LAN Proxy **430** receives incoming ARP packets, it moves the packet to the virtual LAN server **335** which handles the packet and relays the packet on to the correct destination(s). If the ARP packet is a broadcast packet then the packet is relayed to all internal nodes on the Virtual LAN. If the packet is a unicast packet the packet is sent only to the destination node. The destination node is determined by the IP address in the ARP packet when the External Network **125** is running in filtered mode, or by the MAC address in the Ethernet header of the ARP packet (not the MAC address is the ARP packet). '430 Patent, col. 18, l. 35 - col. 19, l. 3.	ARP server, it replace [sic] the internal Giganet based MAC address with the MAC address of the physical Ethernet device as the source MAC address. The source IP address of the internal node will not be changed. It will then send this packet to the physical Ethernet device for transmission. When the VLAN Proxy receives *any* incoming ARP packet it hand the packet to the VLAN ARP server to which it is attached. The VLAN ARP Server will then perform normal ARP processing on the packet. When the VLAN Proxy receives an outgoing packet, it will replace the source MAC address with that of the physical Ethernet interface. It will then queue the packet to the physical Ethernet driver. When an IP packet arrives, the IP address will be extracted and the packet will be given to the appropriate VLAN ARP server to relay to the correct internal node. Cisco Ex. 45 at EGENERA07836885-886.

Likewise, the two documents illustrate the relationship of the virtual LAN proxy to other networking architecture components with substantially the same figures.[3]

The '430 patent	**Interframe Network Architecture**
 FIG. 3B	 Cisco Ex. 45 at EGENERA01836896

Egenera, while acknowledging that Schulter contributed to the reduction to practice of the virtual LAN proxy, denies that he conceived it. Egenera notes that "authorship of an article by itself does not raise a

[3] Although the Interframe Network Architecture document uses the term "LAN proxy" and the '430 patent recoins it "virtual LAN proxy," in light of the substantial correspondence between the disclosures, there is no doubt that the two refer to the same structure.

presumption of inventorship with respect to the subject matter disclosed in the article," *In re Katz*, 687 F.2d 450, 455 (C.C.P.A. 1982), and identifies three earlier documents as supporting prior conception of the virtual LAN proxy. "The Egenera Interframe: A New Architecture for Internet Application Processing" is authored by inventors Ewan Milne and Paul Curtis, and dated June 1, 2000. *See* Egenera Ex. 35 (Dkt # 164-39). The Egenera Interframe document describes

> Interframe™ Controller modules (IFC modules) [that] perform I/O processing and system management functions, but do not run application software. All of the external I/O interfaces are connected to the IFC modules. Application Processor modules (AP modules) run application software, but do not contain any I/O interfaces other than the interface card for the system interconnect. Application Processors are able to perform I/O operations via a message-passing interface to the Interframe™ Controllers. External network interfaces on the Interframe™ Controllers forward incoming TCP/IP traffic to the Application Processors by examining the fields in the packet header to route the packet to the appropriate destination.

Id. at EGENERA00006421.

> A distributed network implementation [] allows AP nodes with no physical network interface to utilize the network interfaces on the IFC nodes. The IFC nodes must be able to multiplex network traffic from several AP nodes onto one physical network interface, and demultiplex the incoming network traffic and send it to the appropriate AP nodes. Some packet filtering logic will be required. This could be extended for simple application load-balancing.

Id. at EGENERA00006428. According to Egenera's expert witness, Dr. Mark Jones, the disclosures of the Egenera Interframe document "indicated that the inventors knew by August 2000 that the IFC . . . would need to proxy external communication and storage network traffic to and from AP nodes." Egenera Ex. 3 (Dkt # 164-5) ¶ 375.

Egenera's second corroborating document is the September 29, 2000 Interframe I/O Architecture documents cited in its IPR response.

> [T]the Interframe administrator can configure simulated Ethernet interfaces on specific application nodes, together with simulated connections among them or to a simulated router for interconnecting to the external network. When an application node requests transmission of a network packet, the network driver in the node's operating system kernel determines whether the packet is destined for another application node within the Interframe or for the external network. Packets destined for another application node are sent directly to that node through the Interframe's Giganet switch. Packets destined for the external network are forwarded through the Giganet switch to one of the Interframe controller nodes, where I/O logic forwards the packet out onto the actual external network interface. Inbound packets arriving from the external network are routed by I/O logic on the Interframe controller node through the Interframe's Giganet switch to the proper application node, where the network driver in that node's operating system kernel in turn delivers them to their ultimate recipient.

Egenera Ex. 19 (Dkt 164-21) at EGENERA00006805-6806. The Interframe I/O Architecture document further discloses the use of unique "simulated MAC addresses . . . within a single Egenera Interframe system," *id.* at EGENERA00006810, and the use of simulated routers.

> All the external network traffic generated by the application nodes must be routed through the four Gigabit Ethernet interfaces on the Interframe controller nodes. Application nodes have no other access to the external network. In order for an application node to access the external network, the Egenera administrator must configure a simulated network interface card on the node and configure simulated cabling between that card and a simulated router on an Interframe controller node. The administrator must then configure routing rules for that router which will determine how incoming and outgoing network traffic applicable to that node is handled by the router.

Id. at EGENERA00006812. Dr. H. Jonathan Chao, another of Egenera's expert witnesses, opined that that "all of the limitations of the claims of the '430 patent are supported by the [Egenera Interframe I/O Architecture document as incorporated in] the [(provisional)] Application." Egenera Ex. 22 (Dkt # 164-24) ¶¶ 4-5.

Egenera's third corroborating document is entitled "Egenera Interframe Architecture," dated October 1, 2000, and is also authored by Max Smith. The Interframe Architecture document discloses that "[a]ll application node I/O is routed indirectly through two Interframe controller nodes that actually interface to the external Ethernet and storage area network. Application nodes communicate with the Interframe controller nodes and among themselves via pre-wired connections through two high-speed switch nodes." Egenera Ex. 36 (Dkt # 164-40) at EGENERA00006788. Further, "[t]he node's configuration also expresses

the virtual Ethernet network interfaces that will be simulated for the node when it boots. This permits the node to be reached from the external high-speed Ethernet network." *Id.* at EGENERA00006799.

On this record, the court finds a genuine dispute of material fact as to the conception of the VLAN proxy. "It is settled that in establishing conception a party must show possession of *every feature* recited in the count, and that *every limitation* of the count must have been known to the inventor at the time of the alleged conception." *Coleman*, 754 F.2d at 359 (emphasis added). The relevant claim limitation – "logic to modify said received messages to transmit said modified messages to the external communication network and to the external storage network" – requires both message modification and message transmission functions for each of the two external networks. The VLAN proxy "bridges the virtual LAN server 335 to the external network 125[,] . . . [and] convert[s] the internal virtual MAC addresses from each node to the single external MAC assigned to the system 100." '430 patent, col. 18, ll. 40-44. According to Schulter's Interframe Architecture document, this is the VLAN proxy's "primary function." Cisco Ex. 45 at EGENERA01836885. The VLAN proxy modifies outgoing messages before transmitting to the external communication network – "it replace [sic] the internal format MAC address with the MAC

address of the physical Ethernet device 129 as the source MAC address." '430 patent, col. 18, ll. 56-58; *see also* Cisco Ex. 45 at EGENERA01836886 (the VLAN proxy "replace [sic] the internal Giganet based MAC address with the MAC address of the physical Ethernet device as the source MAC address.").

Egenera's priority documents, in sum, describe "Controller modules" (the Egenera Interframe document) or "controller nodes" (the Interframe I/O Architecture and Interframe Architecture documents) that interface between internal application nodes/processors and the external communication network. "Packets destined for the external network are forwarded through the Giganet switch to one of the Interframe controller nodes, where I/O logic forwards the packet out onto the actual external network interface." Egenera Ex. 19 at EGENERA00006805. The priority documents do not explicitly disclose modifying messages before transmitting them to the external communication network. Nevertheless, a question remains whether the priority documents sufficiently corroborate the conception of the message modification function for messages going to the external communication network. For the parallel functions of message modification and transmission to the external storage network (which are covered by the same claim limitation), the Interframe I/O document describes the use of "local device numbers," and that "I/O server logic in the

Interframe controller node is aware of which node sent the request and is able to *translate* that node's device number into the proper actual partition on the external storage area network or on an Interframe controller hard drive." *Id.* at EGENERA00006807 (emphasis added). While there is no discussion of address translation for messages going to the external communication network, the Interframe I/O document describe the assignment and use of internal "simulated MAC addresses." *Id.* at EGENERA00006810.

Accepting *arguendo* that Egenera's priority documents corroborate the claimed modification function for messages bound for the external communication network, Cisco argues that they do not disclose the structures for performing this function. *See Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1582 (Fed. Cir. 1996) (The scope of a means-plus-function claim limitation is "restrict[ed] to the structure disclosed in the specification and equivalents thereof."). The '430 patent and Schulter's Interframe Architecture describe and illustrate that virtual LAN proxy connects the virtual LAN driver and physical LAN driver. While Egenera's priority documents indicate that "each controller nodes is connected . . . by . . . Gigabit Ethernet links to the Internet or whatever exterior network supports the Interframe," Egenera Ex. 19 at Egenera00006805, they do not

specify any subcomponents for performing the message modification and transmission functions. Neither party offers any analysis of whether the use of a LAN server and a LAN proxy (albeit in their virtual forms) to perform the stated message modification and transmission functions are "well-known principles or [] the state of the art" that would not entitle the contributor to inventor status. *Ethicon*, 135 F.3d at 1460. In light of the clear and convincing standard governing challenges to patent validity, the court will reserve judgment until it has had the opportunity to hear from the parties and assess the credibility of any testifying witnesses.

ORDER

For the foregoing reasons, the court will DENY the cross-motions regarding inventorship and set the issue for a bench trial commencing January 2, 2019. The court will also DENY without prejudice the remaining dispositive motions and will take them up, if necessary, after the resolution of the inventorship dispute.

SO ORDERED.

/s/ Richard G. Stearns
UNITED STATES DISTRICT JUDGE