I. Comparison of Petition at pp. 18-20 (Ground 1) With the Petition at pp. 39-41 (Ground 2)

Petition at pp. 18-20 (Chu '684 + Chu '366 argument)	**Petition at pp. 39-41 (Chu '684 + Chen argument)**
There is significant overlap between Chu '684 and Chu '366. Both references teach telecommunications systems in which VoIP subscribers can place calls to a customer on the public PSTN. *Compare* **Ex. 1006**, *Chu '684* at 8:65-9:1 ("At step **608**, after receiving all the dialed digits from the phone **101**, server **110** consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN.") *with* **Ex. 1007**, *Chu '366* at 14:30-33 ("[T]here is shown a system for communications between a computing environment **202** including the application program according to the present system and a PSTN telephone **216.**").	There is significant overlap between Chu '684 and ~~Chu '366~~Chen. Both references teach telecommunications systems in which VoIP subscribers can place calls to a customer on the public PSTN. *Compare* **Ex. ~~1006~~1003**, *Chu '684* at 8:65-9:1 ("At step **608**, after receiving all the dialed digits from the phone **101**, server **110** consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN.") *with* **Ex. ~~1007, *Chu '366* at 14:30-33 ("[T]here is shown~~1004**, *Chen* at Fig. 5 (Illustrating a ~~system for communications between a computing environment **202** including the application program according to the present system~~VoIP customer "SIP Phone," external number Translator, "PSTN Gateway, and ~~a~~ PSTN ~~telephone **216.**"~~Switch).
Both references also teach a process in which dialed digits and caller attributes are used to determine where the call should be routed. *Compare* **Ex. 1006**, *Chu '684* at 8:65-9:1 ("At step **608**, after receiving all the dialed digits from the phone **101**, server **110** consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN.") *with* **Ex. 1007**, *Chu '366* at Fig. 6. Finally, both references expressly reference E.164 as	Both references also teach a process in which dialed digits and caller attributes are used to determine where the call should be routed. *Compare* **Ex. ~~1006~~1003**, *Chu '684* at 8:65-9:1 ("At step **608**, after receiving all the dialed digits from the phone **101**, server **110** consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN.") *with* **Ex. ~~1007, *Chu '366*~~1004**, *Chen* at Fig. 6. Finally, both references expressly reference E.164 as an

an international standard dial plan. *Compare* **Ex. 1006**, *Chu '684* at 3:59-61 ("[E]ach IP phone [may be] assigned its own E.164 number (the international standard dial plan) and receiving calls from the PSTN directly.") *with* **Ex. 1007**, *Chu '366* at 1:18-20 ("E.164 [ ] provides a uniform means for identifying any telephone number in the world to any telephony user in the world.").	international standard dial plan. *Compare* **Ex. ~~1006~~1003**, *Chu '684* at 3:59-61 ("[E]ach IP phone [may be] assigned its own E.164 number (the international standard dial plan) and receiving calls from the PSTN directly.") *with* **Ex. ~~1007, Chu '366~~1004**, *Chen* at ~~1:18-20~~¶ 006 ("E.164 ~~[ ] provides a uniform means for identifying any telephone number in the world to any telephony user in the world.").~~ is an ITU-T (International Telecommunication Union Telecommunication Standardization Sector) recommendation that defines the international public telecommunication numbering plan.").
It would have been obvious to one of skill in the art to modify the system described by *Chu '684* with the specific dialed digit reformatting teachings of *Chu '366*. Given that the system of *Chu '684* already contains all the infrastructure needed to support such reformatting, the modification to *Chu '684* would be straightforward, not requiring undue experimentation, and would produce predictable results. Upon reading the disclosure of *Chu '684*, a person of ordinary skill in the art would have recognized that allowing users to place calls as if they were dialing from a standard PSTN phone would be desirable, creating a system capable of supporting a more intuitive and user-friendly interface. *See* **Ex. 1009**, *Houh Decl.* at ¶¶ 35-39.	It would have been obvious to one of skill in the art to modify the system described by *Chu '684* with the specific dialed digit reformatting teachings of ~~*Chu '366*~~*Chen*. Given that the system of *Chu '684* already contains all the infrastructure needed to support such reformatting, the modification to *Chu '684* would be straightforward, not requiring undue experimentation, and would produce predictable results. Upon reading the disclosure of *Chu '684*, a person of ordinary skill in the art would have recognized that allowing users to place calls as if they were dialing from a standard PSTN phone would be desirable, creating a system capable of supporting a more intuitive and user-friendly interface. *See* **Ex. ~~1009~~1006**, *Houh Decl.* at ¶¶ ~~35-39.~~40-44.

One of ordinary skill would thus have appreciated that these improvements to *Chu '684* could be achieved by merely programming the system of *Chu '684* to analyze the dialed digits and reformat as necessary using caller attributes such as national and area code. Such modifications are simply a combination of the system of *Chu '684* with elements of *Chu '366* that would have yielded predictable results without requiring undue experimentation. *Id.* at ¶ 38. Thus, it would have been natural and an application of nothing more than ordinary skill and common sense to combine *Chu '684* with the number reformatting of *Chu '366*. *Id.* Therefore, claims 1, 7, 27-28, 34, 54, 72-74, 92-93, and 111 of the '815 Patent are unpatentable under §103(a) as obvious over *Chu '684* in view of *Chu '366*, as shown in the charts below.	One of ordinary skill would thus have appreciated that these improvements to *Chu '684* could be achieved by merely programming the system of *Chu '684* to analyze the dialed digits and reformat as necessary using caller attributes such as national and area code. Such modifications are simply a combination of the system of *Chu '684* with elements of ~~*Chu '366*~~*Chen* that would have yielded predictable results without requiring undue experimentation. ~~*Id*~~*See id.* at ¶ ~~38~~43. Thus, it would have been natural and an application of nothing more than ordinary skill and common sense to combine *Chu '684* with the number reformatting of ~~*Chu '366*~~*Chen*. *Id.* Therefore, claims 1, 7, 27-28, 34, 54, 72-74, 92-93, and 111 of the '815 Patent are unpatentable under §103(a) as obvious over *Chu '684* in view of ~~*Chu '366*~~*Chen*, as shown in the charts below.

II. Comparison of Petition at pp. 20-36 (Ground 1) With the Petition at pp. 41-58 (Ground 2)

Right-hand column compares:

*the claim chart for Chu '684 + **Chu '366** (Ground 1) **with***
*the claim chart for Chu '684 + **Chen** (Ground 2).*
Red strikethrough represents text in Ground 1, but not in Ground 2.
Blue underline represents text in Ground 2, but not in Ground 1.
[underlining in original omitted]

US Patent 8,542,815	**Obvious over Chu '684 (Ex. 1003) in view of ~~Chu '366~~Chen (Ex. ~~1004)~~1005)**
1. A process for operating a call routing controller to facilitate communication between callers and callees in a system comprising a plurality of nodes with which callers and callees are associated, the process comprising:	*Chu '684 teaches a process for operating a soft-switch ("call routing controller") to facilitate telephone calls ("communication") between callers and callees, each of which is associated with one of a plurality of network nodes.* Chu '684 describes "a novel method for establishing and managing voice call traffic in an VoIP IP virtual private network. The method comprises, in one embodiment, determining the relative location of a terminating point with respect to an originating point of a new communication containing the voice data, determining one or more IP addresses to egress the communication from the originating point to the terminating point." **Ex. 1003**, *Chu '684* at 2:34-44. "An apparatus for IP-based VPN communications includes at least one soft-switch and at least one packet switch having an interface to said at least one soft-switch. The packet switch has a VPN processing module for selectively establishing a VPN based on a selection of originating and terminating IP addresses of voice calls passed to the at least one soft-switch and at least one packet switch. . . . The apparatus may further include a PSTN gateway connected to a gateway soft-switch and said at least one soft-switch

	for processing "off-net" calls." *Id*. at 2:51- 64; *see also id*. at 1:9-13.
(a) in response to initiation of a call by a calling subscriber, receiving a caller identifier and a callee identifier;	*Chu '684 teaches servers and soft-switches that receive subscriber identification (e.g., IP address and ID of IP phone connection to server) and dialed digits of the called party ("caller identifier and callee identifier") when a caller initiates a call.* "The soft-switch is the intelligence of the system. It contains all the information regarding the subscribers' VPNs. For example, it keeps track of the VPN that a location belongs to, the dial plans of the subscribers, the VPN identifier for an VPN (or a particular interface) and the like." *Id*. at 4:59-63. "At step **608**, after receiving all the dialed digits from the phone **101**, server **110** consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN. . . . The server **110** then sends an SIP "invite" message to soft-switch **220** at the central office **205**. . . . The out-going call request message from server **110** to soft-switch **220** includes the following information . . . : (1) the called number; (2) whether the number plan is the private numbering plan or the public E.164 number plan; (3) the ID of the connection to used [ ]; (4) the IP address of IP phone **101** and UDP port number for the backward and forward channels; and (5) other parameters required for enhanced services and features." *Id*. at 8:65-9:26 (emphasis added).
(b) locating a caller dialing profile comprising a username associated with the caller and a plurality of calling attributes associated with the caller;	*Chu '684 teaches locating a subscriber's dial plan that includes a unique subscriber identifier (e.g., E.164 telephone number) ("username") and calling attributes of the subscriber.* "The soft-switch is the intelligence of the system. It contains all the information regarding the subscribers' VPNs. For example, it keeps track of the VPN that a location belongs to, the dial plans of the

	subscribers, the VPN identifier for an VPN (or a particular interface) and the like." *Id*. at 4:59-63. "[U]pon receipt of the SIP "invite" message from the server **110**, the soft-switch **220** consults the dial plan for this subscriber. The dial plan to use can be determined from the ID of the server **110**." *Id*. at 9:30-33. "Many subscribers, each with multiple locations, can be served by the same packet-switch/soft-switch network. Each subscriber can use their the [sic] own IP address plan as well as their own dial plan. To each subscriber, it appears that all their locations are connected by a private network, although the same network is used to serve multiple subscribers." *Id.* at 12:60-66; *see also id*. at 3:56-64 (noting each IP phone can be assigned its own E.164 number and IP address); **Ex. 1006**, *Houh Declaration* at ¶ 45 (noting that because multiple subscribers can be associated with a single server, a subscriber's dial plan, in addition to an ID of the server, must necessarily include unique subscriber-specific information such as an E.164 telephone number, globally unique database key, or the like). ~~*Additionally, Chu '366*~~*Chen teaches establishing a caller dial plan that* ~~*users may set up "call origin profiles" that include calling*~~ *includes attributes of the calling party such as* ~~*geographic location,*~~ *country code*~~*,*~~ *and area code.* **Ex. 1004**, ~~*Chu '366*~~*Chen* at ~~2:9-15~~¶ 0033 (describing ~~call origin location profiles).~~dial plan); *see also id*. at Fig. 6 (illustrating the caller's country code and area code appended to dialed digits to create an E.164 compliant number).
(c) determining a match when at least one of said calling attributes matches at	*As illustrated in Fig. 8B of the '815 Patent, an initial "match" between the dialed digits ("callee identifier") and calling attributes determines*

least a portion of said callee identifier; (d) classifying the call as a public network call when said match meets public network classification criteria and classifying the call as a private network call when said match meets private network classification criteria;	*whether the dialed digits must be reformatted in order to identify the intended callee. Once reformatted (e.g., NDD removed and caller country code prepended), the reformatted callee identifier is used to determine whether the callee is a subscriber on the private network or is a customer on the public network, i.e., whether "public network classification criteria" or "private network classification criteria" are met. The combination of Chu '684 and ~~Chu '366~~Chen performs this precise process.* *~~Chu '366~~Chen teaches reformatting dialed digits to generate an E.164 compliant callee identifier when dialed digits "match" caller attributes, e.g., when the dialed digits equal ~~the national dialing length of the caller's origin designation~~an NDD prefix in the caller's dial plan.* ~~"The intelligent VoIP formatting system includes a presentation and user interface layer, an E.164 formatting engine, a location routine, and a database of telephone number data which are used to deconstruct input telephone numbers and reconstruct them as E.164 compliant telephone numbers." *Id.* at Abstract.~~ ~~"According to the present system, a user is able to enter telephone numbers for VoIP telephone calls as they would according to a traditional telephone numbering plan for land-line telephone calls. . . . The E.164 formatting engine receives the entered phone number and retrieves the call origin location." *Id.* at 1:67-2:20 (emphasis added); *see also id.* at 2:46-53.~~ ~~"In step **172**, if the number of digits entered in a telephone number equals the national length of telephone numbers in the country of the call origin location (e.g., ten digits in the United States), the engine **102** interprets this as a call somewhere within the country of the designated call origin location.~~

	~~Accordingly, in step **174**, the engine **102** concatenates the E.164 prefix, the country code for the country of the designated call origin location and the entered telephone number to form a fully formatted E.164 telephone number." *Id.* at 2:14-22 (emphasis added).~~"In the present invention, each translation function has a corresponding dial plan, and each dial plan has the following components needed by either the translation-**1** or the translation-**2**: (1) IDD prefix, (2) NDD prefix, (3) Country code, and (4) Area code." *Id.* at ¶ 0033; *see also id.* at ¶¶ 0035-0040. *Compare* ~~*Id.*~~*id.* at Fig. 6 (illustrating numerous ~~number~~ match and reformatting scenarios ~~based on matching~~, including, e.g., Cells 606-607 where E.164 compliant number created by removing NDD prefix and prepending caller's country code when dialed digits ~~to caller attributes~~equal NDD prefix) *with* **Ex. 1001**, *'815 Patent* at Fig. 8B (same at Cells 380-388). *Once the callee identifier is reformatted, Chu '684 determines whether the callee is a private packet network subscriber or a public PSTN customer (i.e., whether the call "meets public network classification criteria" or "private network classification criteria").* "At step **608**, after receiving all the dialed digits from the phone **101**, server **110** consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN." **Ex. 1003**, *Chu '684* at 8:65-9:1.
(e) when the call is classified as a private network call, producing a private network routing message for receipt by a call controller, said private	*Chu '684 teaches generating a private network routing message identifying an IP address of the egress packet switch ("address, on the private network, associated with the callee") when the call is classified as private.*

network routing message identifying an address, on the private network, associated with the callee;	"At step **610**, upon receipt of the SIP "invite" message from the server **110**, the soft-switch **220** consults the dial plan for this subscriber. The dial plan to use can be determined from the ID of the server **110**. In this example, the call is to another on-net phone in another location. From the database associated with the dial plan, soft-switch 220 determines the following: (1) the IP address of the egress packet switch; (2) the connection to use as the next hop for the bearer traffic; and (3) the IP address of the soft-switch of the next hop packet switch. Once the soft-switch **220** has determined this information, it sends H.248 commands to packet switch **210.**" *Id*. at 9:30-49 (emphasis added); *see also id.* at Figs. 6-11, 14a, 4:52-56 (describing a first soft-switch sending routing message to a second soft-switch, which controls the egress packet switch).
(f) when the call is classified as a public network call, producing a public network routing message for receipt by the call controller, said public network routing message identifying a gateway to the public network.	*Chu '684 teaches generating a public network routing message identifying a gateway to the public PSTN when the call is classified as terminating to a public PSTN customer.* "For connectivity to the PSTN, gateways **1302** are deployed in the network **200**. For an outgoing call from an originating point phone (IP phone **101** in FIG. 13), the operation is very similar to that of an intra-net call. From the dialed digits (of a destination phone that is being called, PSTN phone **1301**), ingress soft switch **220**, determines that this call is for the PSTN. From the same dialed digits, the soft-switch also determines the egress PSTN gateway **1302** and its controlling soft-switch **1304**. The ingress soft-switch **220** will proceed the call signaling and control as described previously. The gateway **1302** acts as an "egress packet switch" having modifications." *Id*. at 13:12-34 (emphasis added); *see also id.* at 4:52-56 (describing a first soft-switch sending routing message to a second soft-switch, which controls the egress PSTN gateway), Fig. 13.

7. The process of claim 1 further comprising formatting said callee identifier into a pre-defined digit format to produce a re-formatted callee identifier.	~~*Chu '366*~~*Chen teaches reformatting dialed digits ("callee identifier") to generate an E.164 compliant* ~~*callee*~~*called party identifier.* *See* ~~*Chu '366*~~*Chen* disclosures set forth at claim element 1(c~~-d~~). *Compare* **Ex.** ~~**1004**, *Chu '366*~~**1005**, *Chen* at Fig~~.~~, 6 (illustrating ~~numerous number reformatting scenarios based on matching~~ the caller's country code and area code appended to dialed digits to ~~caller attributes~~create an E.164 compliant number) *with* **Ex. 1001**, *'815 Patent* at Fig. 8B (same).
27. A non-transitory computer readable medium encoded with codes for directing a processor to execute a method of operating a call routing controller to facilitate communication between callers and callees in a system comprising a plurality of nodes with which callers and callees are associated, the method comprising:	*See* disclosure set forth at claim element 1 (preamble).
(a) in response to initiation of a call by a calling subscriber, receiving a caller identifier and a callee identifier;	*See* disclosure set forth at claim element 1(a).
(b) locating a caller dialing profile comprising a username associated with the caller and a plurality of calling attributes associated with the caller;	*See* disclosure set forth at claim element 1(b).
(c) determining a match when at least one of said	*See* disclosure set forth at claim element 1(c-d).

calling attributes matches at least a portion of said callee identifier;	
(d) classifying the call as a public network call when said match meets public network classification criteria and classifying the call as a private network call when said match meets private network classification criteria;	*See* disclosure set forth at claim element 1(c-d).
(e) when the call is classified as a private network call, producing a private network routing message for receipt by a call controller, said private network routing message identifying an address, on the private network, associated with the callee; and	*See* disclosure set forth at claim element 1(e).
(f) when the call is classified as a public network call, producing a public network routing message for receipt by a call controller, said public network routing message identifying a gateway to the public network.	*See* disclosure set forth at claim element 1(f).
28. A call routing apparatus for facilitating communications between callers and callees in a system comprising a plurality of nodes with which callers and callees are associated, the	*See* disclosure set forth at claim element 1 (preamble).

apparatus comprising:	
(a) receiving means for receiving a caller identifier and a callee identifier, in response to initiation of a call by a calling subscriber;	*As described in Section III.C.2(a), the corresponding structure for "receiving means" is I/O (input/output) port 208. Chu '684 teaches servers and soft-switches, all of which necessarily include I/O ports, that receive subscriber identification (e.g., IP address and ID of IP phone connection to server) and dialed digits of the called party ("caller identifier and callee identifier") when a caller initiates a call.* *See* disclosure set forth at claim element 1(a). *See also*, **Ex. 1006**, *Houh Declaration* at ¶ 47 (concluding that the servers and soft-switches disclosed by *Chu '684* necessarily include I/O ports that are equivalent to the disclosed I/O Port 208).
(b) means for locating a caller dialing profile comprising a username associated with the caller and a plurality of calling attributes associated with the caller;	*As described in Section III.C.2(b), the corresponding structure for "means for locating" is a processor circuit programmed to implement the algorithm disclosed in cell 254 of Fig. 8A. Chu '684 ~~teaches a subscriber's~~ and Chen teach caller dial ~~plan and Chu '366 teaches "call origin profiles,"~~plans, both of which are necessarily located by a processor circuit programmed with algorithms equivalent to cell 254.* *See* disclosure set forth at claim element 1(b). *See also*, **Ex. 1006**, *Houh Declaration* at ¶ 48 (concluding that the caller dialing profiles taught by *Chu '684* and ~~Chu '366~~Chen are necessarily located by processors programmed with algorithms equivalent to the disclosed RC processor circuit 200 programmed to implement the algorithm disclosed in cell 254 of Fig. 8A).
(c) means for determining a match when at least one of said calling attributes matches at least a portion of said callee identifier; (d) means for classifying the call as a public network call	*As described in Section III.C.2(c), the corresponding structure for ~~these limitations~~"means for determining" is a processor for implementing one or more branch of the algorithm in Fig. 8B. The combination of Chu '684 and ~~Chu '366~~Chen determines when a portion of the dialed digits (callee identifier) matches calling attributes (e.g., dialing*

when said match meets public network classification criteria; (e) means for classifying the call as a private network call when said match meets private network classification criteria;	*length, area code, etc.) in order to reformat the callee identifier as necessary and to then determine if the callee is on the public or private network, which is equivalent to the algorithm in Fig. 8B.* *See* disclosure set forth at claim element 1(c-d). *See also*, **Ex. 1006**, *Houh Declaration* at ¶ 49 (concluding that the combination of *Chu '684* and ~~*Chu '366*~~*Chen* implements an algorithm equivalent to the processor-implemented algorithm of Fig. 8B).
(f) means for producing a private network routing message for receipt by a call controller, when the call is classified as a private network call, said private network routing message identifying an address, on the private network, associated with the callee; and	*As described in Section III.C.2(d), the corresponding structure for "means for producing" is a processor circuit programmed to implement the algorithm illustrated in cell 350 of FIG. 8A and cell 644 of Fig. 8C. Chu '684 teaches generating a private network routing message identifying an address on the private packet network that is necessarily located by a processor circuit.* *See* disclosure set forth at claim element 1(e). *See also*, **Ex. 1006**, *Houh Declaration* at ¶ 50 (concluding that the routing message generation taught by *Chu '684* is necessarily performed by a processor equivalent to the disclosed processor 202 of RC processor circuit 200, programmed to implement the algorithm~~s~~ illustrated in cell 350 of FIG. 8A and cell 644 of Fig. 8C).
(g) means for producing a public network routing message for receipt by a call controller, when the call is classified as a public network call, said public network routing message identifying a gateway to the public network.	*As described in Section III.C.2(d), the corresponding structure for "means for producing" is a processor circuit programmed to implement the claimed function. Chu '684 teaches generating a public network routing message identifying a gateway to the public PSTN that is necessarily located by a processor circuit.* *See* disclosure set forth at claim element 1(f). *See also*, **Ex. 1006**, *Houh Declaration* at ¶ 50 (concluding that the routing message generation taught by *Chu '684* is necessarily performed by a processor equivalent to the disclosed processor 202

	of RC processor circuit 200, programmed to implement the claimed function).
34. The apparatus of claim 28 further comprising formatting means for formatting said callee identifier into a pre-defined digit format to produce a re-formatted callee identifier.	*As described in Section III.C.2(f), the corresponding structure for "formatting means" is a processor for implementing one or more branch of the algorithm in Fig. 8B.* ~~*Chu '366*~~*Chen teaches reformatting dialed digits to generate an E.164 compliant called party identifier by comparing the dialed digits to specific attributes of the calling party, e.g., a dial plan including at least a national code and area code of the* ~~*call origin location*~~*caller, which is equivalent to the algorithm in Fig.* ~~*8B.*~~ *See* disclosure set forth at claim 7. *See also*, **Ex. 1006**, *Houh Declaration* at ¶ 49 (concluding that the combination of *Chu '684* and ~~*Chu '366*~~*Chen* implements an algorithm for formatting the callee identifier that is equivalent to the processor-implemented algorithm of Fig. 8B).
54. A process for operating a call routing controller to establish a call between a caller and a callee in a communication system, the process comprising:	*See* disclosure set forth at claim element 1 (preamble).
(a) in response to initiation of a call by a calling subscriber, locating a caller dialing profile comprising a plurality of calling attributes associated with the caller; and	*See* disclosure set forth at claim elements 1(a-b).
(b) when at least one of said calling attributes and at least a portion of a___ callee identifier associated with the callee match and when the match meets a private network	*See* disclosure set forth at claim elements 1(c-e).

classification criterion, producing a private network routing message for receipt by a call controller, said private network routing message identifying an address, on a private network, the address being associated with the callee; and	
(c) when at least one of said calling attributes and said at least said portion of said callee identifier associated with the callee match and when the match meets a public network classification criterion, producing a public network routing message for receipt by a call controller, said public network routing message identifying a gateway to a public network.	*See* disclosure set forth at claim elements 1(c-d & f).
72. The process of claim 54 further comprising causing the private network routing message or the public network routing message to be communicated to a call controller to effect routing of the call.	*Chu '684 teaches a soft-switch that sends routing messages to a second soft-switch ("call controller") which controls the egress packet switch for a private VoIP call and to the PSTN gateway for call terminating to the public PSTN.* "The soft-switch 220, based on requests from the server 110 or peer soft-switches (explained in greater detail below), sends the appropriate commands to packet switch 210 to set up the appropriate cross-connects." **Ex. 1003**, *Chu '684* at 4:52-56; *see* ~~-~~*also id*. at 9:30-49 (describing private routing message for calls to "on-net phone in another location~~"); *id.* at~~"), Figs. 6-11, 14a, 13:12-34 (describing public routing message for calls to PSTN), Fig. 13.

73. A non-transitory computer readable medium encoded with codes for directing a processor to execute the method of claim 54.	*One of skill in the art would understand that the soft-switch and packet switch functionalities described in Chu '684 are necessarily implemented in software, which necessarily involves codes for directing a processor to implement the method steps* ~~*described*~~*describes in the excerpts above.* **Ex. 1006**, Houh Declaration at ¶ 53.
74. A call routing controller apparatus for establishing a call between a caller and a callee in a communication system, the apparatus comprising:	*See* disclosure set forth at claim element 1 (preamble).
(a) a processor operably configured to: access a database of caller dialing profiles wherein each dialing profile associates a plurality of calling attributes with a respective subscriber, to locate a dialing profile associated with the caller, in response to initiation of a call by a calling subscriber; and	*See* disclosure set forth at claim elements 1(a-b).
(b) produce a private network routing message for receipt by a call controller, said private network routing message identifying an address, on a private network, through which the call is to be routed, when at least one of said calling attributes and at least a portion of a callee identifier associated with the callee match and when the match meets a private network classification	*See* disclosure set forth at claim elements 1(c-e).

criterion, the address being associated with the callee; and	
(c) produce a public network routing message for receipt by a call controller, said public network routing message identifying a gateway to a public network, when at least one of said calling attributes and said at least said portion of said callee identifier associated with the callee match and when the match meets a public network classification criterion.	*See* disclosure set forth at claim elements 1(c-d & f).
92. The apparatus of claim 74 wherein said processor is further operably configured to cause the private network routing message or the public network routing message to be communicated to a call controller to effect routing of the call.	*See* disclosure set forth at claim 72.
93. A call routing controller apparatus for establishing a call between a caller and a callee in a communication system, the apparatus comprising:	*See* disclosure set forth at claim element 1 (preamble).
(a) means for accessing a database of caller dialing profiles wherein each dialing profile associates a plurality of calling attributes with a respective	*See* disclosure set forth at claim elements 28 (a-b).

subscriber, to locate a dialing profile associated with the caller, in response to initiation of a call by a calling subscriber; and	
(b) means for producing a private network routing message for receipt by a call controller, said private network routing message identifying an address, on a private network, through which the call is to be routed, when at least one of said calling attributes and at least a portion of a callee identifier associated with the callee match and when the match meets a private network classification criterion, the address being associated with the callee; and	*See* disclosure set forth at claim elements 28 (c-e & g).
(c) means for producing a public network routing message for receipt by a call controller, said public network routing message identifying a gateway to a public network when at least one of said calling attributes and said at least said portion of said callee identifier associated with the callee match and when the match meets a public network classification criterion.	*See* disclosure set forth at claim elements 28 (c-e & f).
111. The apparatus of claim 93 further comprising	*As described in Section III.C.2(g), the corresponding structure for "means for causing" is processor 202*

means for causing the private network routing message or the public network routing message to be communicated to a call controller to effect routing of the call.	*programmed to perform the algorithms illustrated in cell 381 of FIG. 8A and cell 568 of FIG. 8D. Chu '684 teaches a soft-switch that sends routing messages to a second soft-switch ("call controller") which controls the egress packet switch for a private VoIP call and the PSTN gateway for call terminating to the public PSTN, which is equivalent to these corresponding algorithms.* *See* disclosure set forth at claim 72. *See also*, **Ex. 1006**, *Houh Declaration* at ¶ 52 (concluding that the soft-switch taught by *Chu '684* is equivalent to the disclosed processor 202 programmed to perform the algorithms illustrated in cell 381 of FIG. 8A and cell 568 of FIG. 8D.).