

UNITED STATES PATENT AND TRADEMARK OFFICE  

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

SECURUS TECHNOLOGIES, INC.,  
Petitioner,

v.

GLOBAL TEL\*LINK CORPORATION,  
Patent Owner.

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Case CBM2017- U.S.  
Patent No. 7,783,021

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**PETITION FOR COVERED BUSINESS METHOD REVIEW OF U.S.  
PATENT NO. 7,783,021 PURSUANT TO THE LEAHY-SMITH AMERICA  
INVENTS ACT, PUB. L. NO. 112-29, § 18, 125 STAT. 284, 329-31 (2011)  
AND 37 C.F.R. § 42.300, *ET SEQ.***

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## **LISTING OF EXHIBITS**

Exhibit 1001	U.S. Patent No. 7,783,021 to Hodge
Exhibit 1002	Declaration of Dr. Robert Akl
Exhibit 1003	U.S. Patent No. 7,505,406 to Spadaro
Exhibit 1004	Prosecution File History of U.S. Patent No. 7,783,021
Exhibit 1005	Global Tel*Link Corporation's Supplemental Claim Construction Brief, <i>Global Tel*Link Corp. v. Securus Techs., Inc.</i> , No. 3:14-CV-00829-K, ECF No. 147 (N.D. Tex. July 20, 2015)
Exhibit 1006	Second Revised Joint Claim Construction Chart, <i>Global Tel*Link Corp. v. Securus Techs., Inc.</i> , No. 3:14-CV-00829-K, ECF No. 106 (N.D. Tex. Feb. 27, 2015)
Exhibit 1007	U.S. Patent No. 6,633,635 to Kung et al.
Exhibit 1008	U.S. Patent No. 6,560,323 to Gainsboro
Exhibit 1009	U.S. Patent No. 6,665,380 to Cree et al. ("Cree")
Exhibit 1010	U.S. Patent Pub. No. 2003/0123436 ("Joseph")
Exhibit 1011	Defendant's [Securus'] Supplemental Claim Construction Brief, <i>Global Tel*Link Corp. v. Securus Techs., Inc.</i> , No. 3:14-CV-00829-K, ECF No. 149 (N.D. Tex. Jul. 20, 2015)
Exhibit 1012	U.S. Patent No. 6,064,963 to Gainsboro ("Gainsboro 963")
Exhibit 1013	U.S. Patent No. 7,881,446 to Apple et. al. ("Apple")

Exhibit 1014	Provisional Application No. 60/607,447 (“447 Application”)
Exhibit 1015	U.S. Patent No. 6,052,454 to Kek et. al. (“Kek”)
Exhibit 1016	U.S. Patent No. 7,551,732 to Anders (“Anders”)
Exhibit 1017	U.S. Patent No. 7,899,167 to Rae (“Rae”)
Exhibit 1018	AudioCodes CPE & Access Gateway Products (“AudioCodes”)
Exhibit 1019	Intel High-Density Station Interface Datasheet (“Intel”)

Pursuant to § 18 of the America Invents Act (“AIA”) and 37 C.F.R. § 42.300, *et seq.*, Securus Technologies, Inc. (“Petitioner”) respectfully requests Covered Business Method Patent (“CBM”) review of claims 1-23 of U.S. Patent No. 7,783,021 (“the ’021 patent”), attached hereto as Exhibit 1001. U.S. Patent and Trademark Office (“USPTO”) records reflect that the ’021 patent is currently assigned to Global Tel\*Link Corporation (“Patent Owner”).

**I. MANDATORY NOTICES (37 C.F.R. § 42.8)**

**A. Real Party-In-Interest (37 C.F.R. § 42.8(b)(1))**

Petitioner is the real party-in-interest for this Petition.

**B. Related Matters (37 C.F.R. § 42.8(b)(2))**

The ’021 patent is currently the subject of a patent infringement lawsuit brought by the assignee of the ’021 patent, Global\*Tel Link Corporation, against Petitioner, captioned *Global Tel\*Link Corp. v. Securus Technologies, Inc.*, No. 3:14-cv-0829K (N.D. Tex.) (filed October 21, 2013) (the “GTL Lawsuit”). The GTL Lawsuit is currently stayed pending the conclusion of *inter partes* review proceedings of U.S. Patents No. 7,551,732 and 7,853,243, which are currently on appeal. *See Global Tel\*Link Corp. v. Securus Techs., Inc.*, No. 16-2573 (Fed. Cir. docketed Aug. 25, 2016); *Global Tel\*Link Corp. v. Securus Techs., Inc.*, No. 16-2135 (Fed. Cir. docketed May 26, 2016).

**C. Counsel & Service Information (37 C.F.R. §§ 42.8(b)(3)-(4))**

Petitioner designates the following counsel at the addresses shown below and consents to electronic service at the email addresses below with a courtesy copy to SecurusIPRcounsel@bcpc-law.com.

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A power of attorney designating counsel is filed concurrently with this Petition. Petitioners request authorization to file a motion for Back-Up Counsel to appear *pro hac vice*.

**II. REQUIREMENTS FOR A PETITION FOR CBM REVIEW**

**A. Time for Filing (37 C.F.R. § 42.303)**

The '021 patent was granted on August 24, 2010. Petitioner certifies that it



has filed this action more than nine months after the grant of the '021 patent and thus satisfies the time for filing requirement under § 42.303.

**B. Payment of Fees (37 C.F.R. § 42.203)**

Payment for the fees set forth in 37 C.F.R. § 42.15(b) for this Petition accompanies this request.

**C. Covered Business Method Review Eligibility and Grounds for Standing (37 C.F.R. §§ 42.302 and 42.304(a))**

Petitioner verifies that it is eligible to file this Petition to request CBM review under § 42.302 and has grounds for standing under § 42.304(a) because the Petitioner certifies that it has been sued for alleged patent infringement of the '021 patent in the above-referenced lawsuit, is not estopped from challenging the claims on the grounds identified in the petition, and has not challenged the validity of any claims of the '021 patent in a civil action. Furthermore, Petitioner demonstrates in Section V, *infra*, that the '021 patent qualifies as a CBM pursuant to § 42.304(a).

**III. IDENTIFICATION OF CHALLENGE (37 C.F.R. § 42.304(b)) AND RELIEF REQUESTED (37 C.F.R. § 42.22(a)(1))**

Pursuant to §§ 42.22(a)(1) and 42.304(b)(1), Petitioner challenges claims 1-23 of the '021 patent.

**A. Citation to Prior Art**

Securus relies on the following prior art references for the grounds asserted in this Petition:

1. U.S. Patent No. 6,633,635 (Exhibit 1007, “Kung”) titled “Multiple Call Waiting in a Packetized Communication System” and published July 17, 2003;
2. U.S. Patent No. 6,560,323 (Exhibit 1008, “Gainsboro”) titled “Computer-Based Method and Apparatus for Controlling, Monitoring, Recording and Reporting Telephone Access” and published June 13, 2002;
3. U.S. Patent No. 6,665,380 (Exhibit 1009, “Cree”) titled “Inmate Messaging System and Method” and issued December 16, 2003; and
4. U.S. Patent Pub. No. 2003/0123436 (Exhibit 1010, “Joseph”) titled “System and Method for Voice over Internet protocol (VoIP) and Facsimile over Internet Protocol (FoIP) Calling over the Internet” and published July 3, 2003.

Because Kung, Gainsboro, Cree, and Joseph were each patented or published more than one year before the earliest effective filing date of the ’021 patent, they are prior art under at least 35 U.S.C. §§ 102(a) and 102(b).<sup>1</sup>

#### **B. Challenged Claims and Grounds for Unpatentability**

The following challenged claims are invalid under the grounds indicated below and demonstrate that it is “more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a); 37 C.F.R. § 42.208.

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<sup>1</sup> Because the ’021 patent was filed before March 16, 2013, all citations herein are based on the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

Ground	Prior Art/Basis	Claims Challenged	Independent Claims
§ 103	Gainsboro and Kung	1-19	1, 7, 16
§ 103	Gainsboro, Cree, and Joseph	20-22	20
§ 103	Gainsboro, Cree, Joseph and Kung	23	

#### IV. THE '021 PATENT

##### A. Overview of the '021 Patent

The '021 patent titled “Digital Telecommunications Call Management and Monitoring System” was filed on January 28, 2005, and issued on August 24, 2010. The '021 patent generally relates to systems and methods directed to “a centralized, fully self-contained, digital, computer-based telecommunication system with the capacity to allow an institution to control, record, monitor, and report usage and access to a telephone network.” '021 patent, 1:8-12. More specifically, the '021 patent is directed toward such a system that operates “in either a local area network (‘LAN’) or a wide area network (‘WAN’).” *Id.*, 9:44-46.

“The platform may include a site server. This device serves as the main database for the telephone management system. It has the ability to log and record details of all telephone calls placed through the system and store them ....” *Id.*, 9:60-65. The site server also “digitizes all information” and may include a “recorder ... responsible for recording the telephone calls and storing them in one or more databases.” *Id.*, 9:65-10:2. User identification and authentication means described by the '021 patent for providing access to the telephone management system include

PIN verification and biometric data verification. *Id.*, 11:7-20, 50-53. For example, biometric data may include “voiceprints, facial architecture, signature architecture, fingerprints, retinal prints, hand geometry, and the infrared pattern of the face.” *Id.*, 11:53-56.

The claims of the '021 patent simply disclose a call processing system with a central platform connected to telephone terminals. This central platform, which may involve a VOIP connection, provides that administrative workstations may be connected to the system, for calls to be recorded and digitized, for an administrative workstation to bill the appropriate party, and for the identity of the user of the system to be verified. Given the interest that facilities such as prisons had in controlling their own telephone systems, the advantages of digital data exchange networks over legacy systems, and the fact that all features disclosed in the '021 patent were known at the time of the invention, combining the prior art based on the asserted grounds in this Petition would have been obvious to one of ordinary skill in the art at the time of the '021 patent.

#### **B. Summary of the Relevant Prosecution File History**

After the Examiner rejected all claims under § 102 over U.S. Pat. No. 7,505,406 (“Spadaro”) (Ex. 1003), the applicant amended each of the independent claims in a kitchen-sink approach to seeking an allowance by adding numerous limitations claiming known techniques to yield predictable results. *See* Ex. 1004

(“’021 File History”) at 94, 78, 59. This is further evidenced by the fact that none of the added limitations came from dependent claims, but rather from adding “wherein” clauses that imbued the claimed “central platform” with routine material from the specification which Spadaro purportedly does not disclose explicitly.

For example, applicant amended claim 16 to replace the limitation “wherein the steps of identifying, monitoring, controlling, allowing, storing and billing are under control of a central platform” with the following litany of limitations:

wherein said telephone call management system  
comprises a central platform for processing said  
telephone call,  
wherein said central platform controls said telephonic  
communications between said local user and said  
remote user,  
wherein said central platform records conversations in said  
telephonic communication between said local user  
and said remote user, and  
further wherein said central platform digitizes audio  
regarding said conversation and stores said audio  
for caller identification at an institution associated  
with said local user,  
wherein said central platform connects with an  
administrative workstation for connecting to a call  
placed from said institution without detection by  
said local user; and

further wherein said central platform communicates with  
an administrative workstation for billing for said  
telephonic communication made from said  
telephone call management system.

*Id.* at 63-64, 82-83; *see also id.* at 85, 87-88 (citing to nearly all the Detailed Description section as support). After adding the above list of limitations, the examiner issued a Notice of Allowance after a cursory search and without issuing another rejection. *See id.* at 50-53.

### **C. Level of Ordinary Skill in the Art**

The relevant field of the '021 patent is the field of telephone communications systems in controlled environments. '021 patent, 1:6-8; Ex. 1002 ("Akl Decl.") ¶¶ 43-44. (discussing the applicability of the purported invention to many different type of institutions and facilities); *see also* '021 patent, 9:30-35 ("The system of the present invention may be implemented in a variety of facilities including penal institutions or similar facilities such as mental institutions, nursing homes, rehabilitation centers, correctional facilities, government agencies, private and public businesses, and the like.").

A person of ordinary skill in this field would have had at least a Bachelor's Degree in Electrical Engineering, Computer Engineering, or the equivalent and two or more years of industry experience in a relevant field, or the academic equivalent thereof. Akl Decl. ¶ 73-74. In particular, the record prior art shows that persons of

ordinary skill would have had the education, training, and experience in the implementation, operation, and maintenance of legacy telephone systems and knowledge of their application to the needs of institutions and the limitations of those applications. *Id.* (summarizing Dr. Akl’s level of skill analysis of paragraphs 56-72). Furthermore, persons of ordinary skill would have had experience in the migration and adaptation of digital platforms into legacy systems, including knowledge of how VoIP equipment can improve traditional telephony equipment, such as PBXs and analog telephones. *Id.* ¶73. Such a person would have been familiar with the standard components, methods, and protocols used at the time of the invention of the ’021 patent for networking, call processing, data storage, user authentication, security, and resource management. *Id.* ¶ 74.

#### **D. Claim Construction**

In a covered business method review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b). “Under a broadest reasonable interpretation, words of the claim *must* be given their plain meaning, unless such meaning is inconsistent with the specification and prosecution history.” *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016) (emphasis added).

A claim element that uses the term “means” creates a rebuttable presumption that 35 U.S.C. § 112 ¶ 6 applies to that element. *Williamson v. Citrix Online, LLC*,

792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). Means-plus-function claim language “shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” § 112 ¶ 6. In construing a means-plus-function claim limitation, the first step is “to identify the function explicitly recited in the claim,” and then the next step is “to identify the corresponding structure set forth in the written description that performs the particular function set forth in the claim.” *Asyst Techs., Inc. v. Empak, Inc.*, 268 F.3d 1364, 1369 (Fed. Cir. 2001); *see also* 37 C.F.R. § 42.304(b)(3).

However, in making the assessment of whether a limitation is a “means-plus-function term subject to the strictures of § 112, para. 6 ... the essential inquiry is not merely the presence or absence of the word ‘means.’” *Williamson*, 792 F.3d at 1348. Rather, “[t]he standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.* at 1349. “When a claim term lacks the word ‘means,’ the presumption [that § 112 ¶ 6 does not apply] can be overcome ... if the challenger demonstrates that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’” *Id.*

Besides those discussed in the subsections *infra*, Petitioner does not contend that any special definition has been provided in the specification for any claim term. *See* Akl Decl. ¶ 81. All other terms should receive their plain and customary



meaning. *Id.* Petitioner reserves the right to respond to, and/or offer alternative constructions, to any proposed claim term constructions offered by Patent Owner.

The following constructions are offered solely for the purposes of this CBM proceeding under the broadest reasonable interpretation standard. Petitioner contends that different constructions should apply in the underlying district court proceeding under the standard of *Phillips v. AWH Corp.*, 415 F.3d 1303-13 (Fed. Cir. 2015) (en banc). Without advocating for Patent Owner's construction in the underlying litigation, Petitioner shows that even under the constructions proffered by Patent Owner in that forum, that this Petition shows all of the claims of the '021 patent are invalid under the grounds asserted. The following constructions are offered without prejudice to Petitioner's right to maintain and/or present different constructions in district court under the *Phillips* standard (a right that Petitioner expressly reserves). *See, e.g., Research Frontiers, Inc. v. E Ink Corp.*, C.A. No. 13-1231-LPS, 2016 WL 1169580, at \*3 n.4 (D. Del. Mar. 24, 2016) (rejecting a patentee's argument that an accused infringer is estopped from asserting a different claim construction in district court under *Phillips*).

**1. The Term “routing means” Is a Means-Plus-Function Limitation.**

Claim 1 recites “at least one routing means” and claims 2 and 11 also use the term “routing means.” Because the term “routing means” uses the word “means,” Petitioner presumes that these claim terms are governed by § 112 ¶ 6. *See*

*Williamson*, 792 F.3d at 1348. Indeed, courts have routinely construed “routing means” as a means-plus-function limitation under § 112 ¶ 6. *See TI Grp. Auto. Sys. (N.A.), Inc. v. VDO N.A., L.L.C.*, 375 F.3d 1126, 1137 (Fed. Cir. 2004); *800 Adept, Inc. v. AT&T Mobility, LLC*, Nos. 5:07CV23, 5:07CV57, 2008 WL 4831093, at \*11, \*35-36 (E.D. Tex. July 23, 2008). Moreover, Patent Owner conceded that § 112 ¶ 6 applies to these claim terms in related litigation. *See* Ex. 1005 at 5 (“GTL recognizes that it would be appropriate for the Court to analyze this claim term under § 112, ¶ 6.”).

Securus’ proposed means-plus-function construction of “routing means” applies under the broadest reasonable interpretation standard:

The “routing means” function should be construed as “routing a telephone call from said telephone terminal to said central platform.” *See* Akl Decl. ¶¶ 84-85. Alternatively, and without advocating for the following construction, Securus maintains that the challenged claims are also invalid under GTL’s construction: “routing calls placed by users of the system through the platform to an outgoing trunk.” *See* Ex. 1006 at 7.

The function is supported at least by the following structure: “A router located onsite at an institutional facility, a communication link connecting the router to said telephone terminal, and a communication link connecting the router to said central platform.” *See* Ex. 1006 at 7; ’021 patent at 15:59-16:32 (“Routers 121a-n”), Fig. 1;

*see also* Akl Decl. ¶¶ 86-87. Alternatively, even using GTL’s proposed structure that it cited in litigation: “Routers 121a-n of Figure 1; routing means integrated with Platform 102 of Figure 2; routers 213a-n of Figure 3; or router 221 of Figure 4,” claims that have the “routing means” limitation are still obvious. Ex. 1006 at 7; *see also* Akl Decl. ¶ 88.

## **2. The Term “authentication means” Is a Means-Plus-Function Limitation.**

Claims 3 and 13 recite an element that is required only “if an authentication means verifies identification information as indicative of a valid user.” ’021 patent, 20:8-11. This conditional language does not limit the claims under the broadest reasonable interpretation standard. *See Ex parte Katz*, No. 2010-006083, 2011 WL 514314, at \*4 (B.P.A.I. 2011) (citing *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004)). To the extent that the Board finds that this element limits claims 3 and 13, the parties agree that the term “an authentication means” is governed by § 112 ¶ 6. *See* Ex. 1006 at 3.

The parties agree that the following means-plus-function construction of “authentication means” applies under the broadest reasonable interpretation standard: The function is “verifying identification information as indicative of a valid user.” Ex. 1006 at 3. The corresponding structures are at least “[u]ser-specific personal identification number (“PIN”) and information entered by the user for comparison with information stored in a database for that specific user.” Akl Decl.

¶¶ 89-91 (citing '021 patent, 11:10-12 and Ex. 1006 at 3). Furthermore, corresponding structure may also include a PIN and biometric data that is scanned, converted, and stored in a database. *See* Ex. 1006 at 3; '021 patent, 11:50-12:3.

## **V. CBM ELIGIBILITY**

### **A. The '021 Patent Is a Covered Business Method Patent.**

A covered business method patent is statutorily defined as “a patent that claims a method or corresponding apparatus for performing data processing or other operations *used in the practice, administration, or management of a financial product or service*.” AIA § 18(d)(1) (emphasis added); 37 C.F.R. § 42.301(a). As the Federal Circuit has noted, the statute “on its face covers a wide range of finance-related activities.” *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1325 (Fed. Cir. 2015). The definition of what constitutes a covered business method “is not limited to products and services of only the financial industry, or to patents owned by or directly affecting the activities of financial institutions such as banks and brokerage houses.” *Id.* For example, claims that are “financial in nature” satisfy the statutory definition of “covered business method patent.” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1340 (Fed. Cir. 2016); *see also Unwired Planet, LLC v. Google Inc.*, 841 F.3d 1376, 1380 n.5 (Fed. Cir. 2016) (endorsing the “‘financial in nature’ portion of the standard as consistent with the statutory definition of ‘covered business method patent’”). In particular, “‘financial activity’ not directed

to money management or banking can constitute a ‘financial product or service’ within the meaning of the statute.” *Blue Calypso*, 815 F.3d at 1338.

**1. The ’021 Patent Claims Cover Activities Related to a Financial Product or Service.**

The ’021 patent claims are drawn to a method for performing data processing or other operations used in the practice, administration, or management of a financial product or service. Simply put, the billing functions that are required to be performed as part of every challenged claim each constitute a “financial service” and each inmate phone call represents a financial transaction. While it is sufficient that a patent have a single claim that qualifies as a CBM to allow institution for all other claims of the patent, *see J.P. Morgan Chase & Co. v. Intellectual Ventures II LLC*, CBM2014-00157, 2016 WL 626517, at \*7 (P.T.A.B. Jan. 12, 2016); *SAP Am., Inc. v. Versata Dev. Grp.*, CBM2012-00001, 2013 WL 5947661, at \*12 (P.T.A.B. Jan. 9, 2013), each claim of the ’021 patent recites “wherein said [one or more apparatuses / central platform] communicates with an administrative workstation **for billing** [regarding / for] said [telephone call / telephonic communication] [originating / made] from said [institution / telephone terminal / telephone call management system].” *See* ’021 patent, 19:11-14, 19:58-60, 20:47-50, 22:5-7 (emphasis added). Claim 15 further includes “at least one workstation for monitoring, controlling, storing and **billing** related to said telephone communication.” *Id.*, 20:15-19 (emphasis added).

The method of claim 16 is illustrative. It comprises the steps of, among other things, “***billing for usage of said system***” and “communicat[ing] with an administrative workstation ***for billing for said telephonic communication*** made from said telephone call management system.” *See id.*, 20:20-50 (emphasis added). In particular, claim 16 recites a method that monitors a call between a local user and remote user, controls whether the call will be placed over a network, and then ***bills for the call***. *See id.*, 20:20-50; *see also id.*, 1:8-12 (describing a telecommunications system that allows “an institution to control, record, monitor, and report usage and access to a telephone network”). Moreover, claim 16 is not limited to the context of “inmate” communications, but could be used in any corporate setting. *See* Akl Decl. ¶¶ 43-44, 99 (discussing the applicability of the purported invention to financial activity in many different types of institutions and facilities). This “financial activity” is sufficient to qualify the ’021 patent as a covered business method.

That the claims are financial in nature is further demonstrated by the patentee’s statements in the specification. For example, “[t]he present invention discloses a centralized, digital, computer-based telephone call management system” that “may ***implement a debit card platform or other such payment methods*** ... in a variety of facilities....” ’021 patent, 9:30-35 (emphasis added). Further, the ’021 patent provides that “[a]n additional object of the present invention is to ***incorporate billing means such as a debit card system***” and/or “incorporate

advanced, user-friendly software for monitoring, controlling, recording, and ***billing***.” *Id.*, 15:1-2, 15:10-12 (emphasis added). The Abstract of the ’021 patent also describes its system controlling and processing financial activity:

The system includes the capacity to allow an institution to control, record, monitor, and ***bill*** and report usage and access to a telephone network. The telephone call management system further includes both ***accounting*** and management software for use in controlling, monitoring, ***billing***, recording, and reporting usage and access.

*Id.*, Abstract (emphasis added).

It would have been understood by a person of ordinary skill that each user, as a calling or called party, is a “customer” of the institution. Akl Decl. ¶ 98. For example, the claims cover “***billing for said telephonic communication[s]*** made from said telephone call management system.” *See, e.g.*, ’021 patent, 20:48-50. The specification explains that a “user’s commissary information” is tracked “when a debit system is used” by an administrative workstation. *Id.*, 17:4-6. This workstation further records the “total amount spent on the collect calls by each user, amount spent on debit calls by each user, [and] the total net.” *Id.*, 17:8-14. As one example, an inmate may call an outside party and be billed for the inmate’s usage of the call management system. *See, e.g., id.*, 10:57-60 (“The amount of each call maybe [sic] subtracted from the account after its completion.”); *see also* Akl Decl. ¶¶ 95-96, 99 (explaining that the claims recite “billing for usage” without any limitation on the

type of party billed, i.e., the user or the institution); '021 patent, 11:2-4 (describing how “important statistics” regarding the system can be tracked “such as the *net profit* of the telephone management system,” which indicates the prison has a financial interest in how the user is billed) (emphasis added). Thus, the '021 patent claims disclose a call management system that covers the financial aspect of the institutions using the system. Akl Decl. ¶¶ 93-99.

Notably, the '021 patent claims are plainly unlike those at issue in *Unwired Planet*, which arguably involved the *potential* sale of a good or service. *Unwired Planet*, 841 F.3d at 1382. There is no need to speculate that a potential sale might occur with the methods and systems of the '021 patent because, as discussed, each claim expressly includes a billing aspect. For the same reason, the claims in the '021 patent are unlike a “patent for a novel lightbulb that is found to work particularly well in bank vaults,” or “a patent for an apparatus for digging ditches,” because the claims involve the sale of services. *See id.*

## **2. The '021 Patent Is Not a Technological Invention.**

A claim that does not represent a “technological invention” qualifies a patent for CBM review. AIA § 18(d)(1). To qualify as a technical invention, “the claimed subject matter as a whole” must recite “a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.” 37 C.F.R. § 42.301(b). However, since it only takes “a single [qualifying]



claim [to be] sufficient to institute a covered business method review,” *SAP Am.*, 2013 WL 5947661, at \*12, every claim of the ’021 patent would have to represent a “technological invention” in order for the ’021 patent to be disqualified from CBM review.

The following claim characteristics do not typically reflect a “technological invention”:

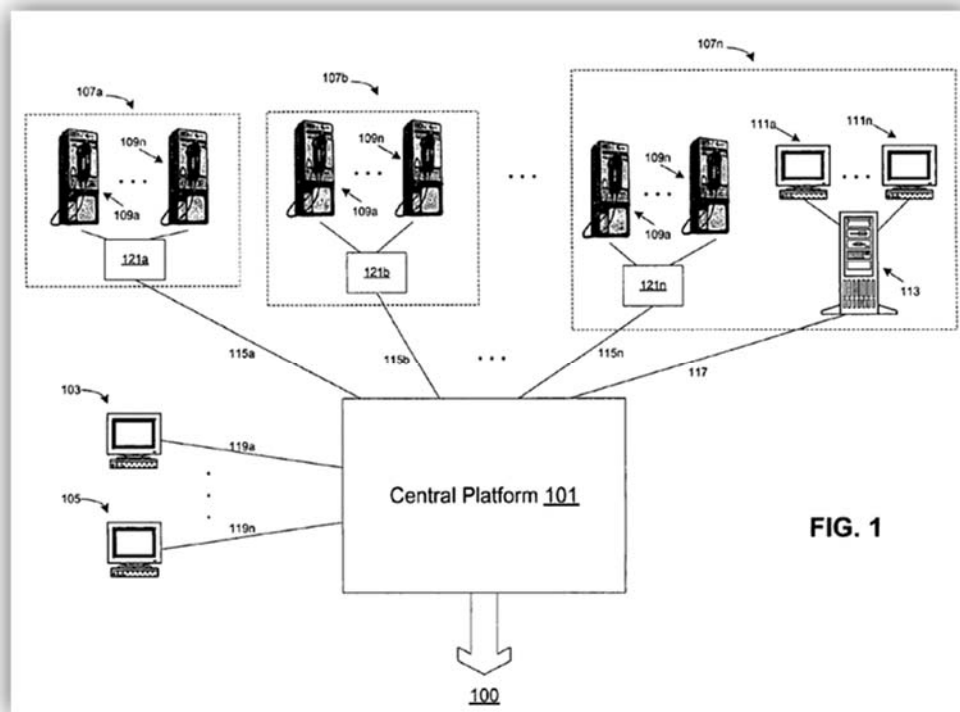
- (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device;
- (b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious; or
- (c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48763-64 (Aug. 14, 2012).

The ’021 patent claims do not recite any technological feature that is novel or unobvious over the prior art, or that solves a technical problem using a technical solution. *Akl Decl.* ¶¶ 100-13. The claims merely recite known technologies, such as telephone and computer networks, and add no technological innovation over the prior art. *Id.* Rather, the ’021 patent claims allegedly solve a problem using various methods, each of which can be carried out using conventional software and hardware

components. Accordingly, no special technical solution in the context of the covered business method patent definition is required or particularly claimed by the claimed inventions of the '021 patent.

As depicted below in Figure 1, the '021 patent system components that perform the operations recited by the '021 patent claims, such as in Claims 1 and 16, are simply a collection of generic elements commonly found in telecommunications systems at the time of the invention. Akl Decl. ¶¶ 101-02.



*See, e.g.,* Fig. 1 (above) (showing the elements of the system as generic blocks).

For example, system claim 1 recites a series of common elements: “telecommunications call processing system comprising ... trunk lines of a Public

Switched Telephone Network (PSTN) ... [a] telephone terminal ... a central platform [that] is located offsite from said institution ... one or more apparatuses for processing said telephone call ... an administrative workstation ... [and] routing means.” ’021 patent, 18:50-19:14; Akl Decl. ¶¶ 101-02. Method claim 16 recites the use of a known prior art technology (a telecommunications system). *E.g.*, “identifying a local user”, “monitoring [controlling, and allowing] access” to the system, “storing ... telephonic communication,” “billing for usage,” and “record[ing] and digitizing” conversations. ’021 patent, 20:20-50; Akl Decl. ¶¶ 102-03. In addition, claim 7 recites a “network connection [and] a gateway.” ’021 patent, 19:34-60. Finally, claim 20 recites that the claimed central platform “includ[es] a high density station interference card access and an Internet protocol link card egress.” ’021 patent, 20:62-22:7; Akl Decl. ¶¶ 102-03.

Each of the components claimed in the ’021 patent is known in the prior art and performs well-known functions. Akl Decl. ¶ 103-04. “Trunk lines” would have been understood to include the communication lines that tie a telephone located at a site (such as a business or home) to the public switched telephone network. *Id.* A “central platform” – to the extent this term could be understood at all – is merely one or more processors running software or firmware that provides telecommunications services, such as those claimed in claim 16, to communication devices commonly connected to the platform. *Id.* A “telephone terminal” would have been understood

to be a telephone that can place and receive calls. *Id.* An “administrative workstation” would have been understood to be a computer terminal at which a person can interface with the operation of the central platform. *Id.*

Indeed, as discussed in detail below, the prior art references Gainsboro and Kung disclose each of these well-known elements operating in the same way in its disclosed inmate communications system. Akl Decl. ¶¶ 103-05 (explaining that Gainsboro discloses a central platform having an administrative workstation, where the platform is coupled to a plurality of trunk lines, at least one telephone terminal, and at least one network connection).

In the '021 patent, trunk lines tie the telephonic instruments 109a-n to the PSTN through the central platform 101. In Figure 1, the trunk lines and PSTN are jointly represented as the arrow 100. The central platform connects to “routers 121a-n at sites 107a-n.” Akl Decl. ¶¶ 106-07 (citing '021 patent, 15:59-16:39, explaining how the embodiment shown in Figure 1 operates). Administrative workstation 105 also connects to the central platform 101. Predictably, these system components function as would have been expected: “Calls placed by users [using the telephonic instruments] of the system are routed [using the router as a routing means] through the [central] platform and connected [by the trunk lines] to the proper outgoing trunk.” *See id.* ¶ 46 (Dr. Akl’s summary citing '021 patent, 9:48-51).

The '021 patent’s purported contribution to the art does not make it a

technological invention. In the prosecution of the '021 patent, the applicant touted the “an administrative workstation for connecting to telephone terminal to monitor conversations between said institution without detection by said user” as a distinguishing feature of the claims. '021 File History at 67-68. But workstations were well known, and so was this allegedly novel functionality. Gainsboro provides for “‘live’ call (voice) monitoring, where the prison officials actively listen to a live call.” Gainsboro, 4:32-33; *see also* Akl Decl. ¶ 108 (explaining that an administrator would have tapped into the conversation via line 41a without detection by the user, i.e., the inmate, by silently monitoring the line). Furthermore, the monitoring operation was not a technology, since it was a function that could and often was performed by a person. *Id.*

The '021 patent claims are also directed to telecommunication systems that utilize a “gateway.” *See* '021 patent, 19:39-40 (“at least one gateway connected between the at least one telephone terminal and the central platform”). Gateways at the time of the invention were devices that converted protocols between otherwise incompatible networks or network devices. Akl Decl. ¶ 109. Kung discloses that the “broadband residential gateway 300 may be configured as the interface unit between the remainder of the customer premise equipment 102 devices [i.e., the telephones] and the external network.” Kung, 16:50-53; *see* Akl Decl. ¶ 109 (citing '021 patent, 18:18-19 and explaining that a gateway was common device used to translate an

analog voice signal to a digitized VOIP signal to prepare the signal for transmission in an IP telephony system).

The claimed gateway could integrate the functions of or commonly operated with a “routing means” of claim 1 or a “router” of claim 20. *See* ’021 patent, 18:17-18 (stating that “[g]ateway 205a can further include routing means”). Persons of ordinary skill in the art were aware and capable of implementing a router to operate with the known gateways to operate in an analog phone environment. Akl Decl. ¶ 109 (citing the residential broadband gateway of Kung).

The ’021 patent claims are also directed to a central platform including a “high density interface card access and an Internet protocol link egress.” ’021 patent, 20:67-68. Each of these elements also embodies a generic system function that was commonly used in the context of telecommunications—adding nothing novel to the claims. Akl Decl. ¶¶ 112-13. Line control cards were well-known to provide “switching and access control for remote telephone lines and for” local phones, including in the context of prisons for “cell block telephones.” *Id.* A high density station interface card (or “HDSI”) is a line control or telephone interface that allowed a system platform to handle a large number of calls—scale the number of users using the system. *Id.*

Similarly, claimed “internet protocol [or IP] link card egress” was a known technology for voice connectivity over the Internet. *Id.* ¶ 113. For example, Kung

discloses IP link connectivity, stating that the “analog voice may be converted to digital data and packetized for transmission in an appropriate output protocol such as an Internet protocol (IP).” Kung, 4:22-25. Accordingly, the claimed HDSI card and IP link card egress were each, therefore, no more than a known technology implemented in a known way to achieve its intended and predictable purpose of managing a high-volume of communications in an IP telephony system. Akl Decl. ¶ 113.

There is no invention in the '021 patent, technological or otherwise. None of the claimed components of the '021 patent performs an extraordinary or unexpected function, but they are merely known technologies combined to predictably connect users, monitor user conversations without detection, and bill for their usage. Akl Decl. ¶ 113. The '021 patent is therefore eligible for CBM review.

## **VI. GROUNDS FOR UNPATENTABILITY**

### **A. GROUND 1: The Combination of Kung and Gainsboro Renders Claims 1-19 Obvious.**

#### **1. Motivations to Combine Kung and Gainsboro and Rationales for Obviousness**

The combination of prior art cited in this Petition does not have the same alleged deficiencies as the prior art raised during the prosecution of the '021 patent. Akl Decl. ¶¶ 321, 329. Gainsboro teaches a central platform comprising one or more apparatuses that “digitizes audio and stores said audio for caller identification at said

institution” and “an administrative workstation for connecting to telephone terminal to monitor conversations between said institution without detection by said user.” Gainsboro further discloses advantageously utilizing monitoring, call processing, and billing functions of a telecommunications system in a prison environment. As discussed, *infra*, in Sections VI(A)-(B), these elements, among others, are disclosed by Kung, Gainsboro, Cree, and Joseph.

Although Gainsboro utilizes a trunk management unit (TMU) for selectively connecting the institutional telephones to one or more outside telephone lines operating on a computing central platform, it arguably does not disclose that the central platform is “off-site” (claim 1) and includes a “high density interface card access and an Internet protocol link card egress” (claim 20) connecting to “routing means” / “a router” (claims 1 and 20) or a “gateway” that “routes [or sends] attempted telephonic communications to said central platform” (claims 2 and 10) over a “VOIP connection” (claims 8 and 20). These arguable differences between Gainsboro and the claims of the ’021 patent are resolved by the combination Kung, Gainsboro, Cree, and Joseph in view of the knowledge of persons of ordinary skill in the art. *See* Akl Decl. ¶ 60 (explaining that in addition to Gainsboro, Kung, Cree, and Joseph, other references confirm the characteristics and understanding of a person of ordinary skill in the art at the time of invention).

For the following reasons, persons of ordinary skill in the art would have been



highly motivated to combine Gainsboro with the “new broadband architecture” of Kung that advantageously (and predictably) “gives rise to a new array of user services.” Akl Decl. ¶ 116 (quoting Kung, 1:27-29, 3:31-42). At the time of the invention, “[t]he telephone industry [was] continually seeking to apply new technologies to provide new and more flexible telephone calling services.” *Id.* ¶¶ 62, 316.

It was also well-known that prison facilities sought “to exert control over its telephones rather than leaving [its system] in the hands of the telephone company.” *Id.* (quoting Kek, 1:18-20); *see also id.* ¶ 63 (discussing that phone systems in prisons “must be capable of such access control” and citing Kek, 1:28-42). Prison facilities implemented inmate calling services, particularly in “automation of call setup, monitoring and billing processes ... through the use of analog telephone equipment ... connected to one or more personal computers located on-premises at correctional facility locations.” *Id.* ¶¶ 64, 316 (citing ’447 Application, 2:1-3, 14-18).

Prison facilities also had an interest in placing restrictions on inmate calls using “computer controlled equipment at the facility and/or at remote locations in addition to human monitoring and/or control.” Akl Decl. ¶¶ 65, 317 (quoting Anders, 1:64-2:2). Recording inmate conversations, for example using recording equipment such as that disclosed by Gainsboro, was advantageous in a prison, but it presented

the problem of “retaining the recordings ... as the data becomes large very quickly.” *Id.* (quoting Anders, 2:35-41 and citing *id.*, 2:42-44). Thus, persons of ordinary skill at the time of the invention were seeking new ways to efficiently provide calling services, including maintaining call restrictions, and to address the data management problems presented by monitoring and recording inmate conversations. *Id.* ¶ 317.

At the time of the invention, call processing systems were “locally disposed ... [and] provide[d] a number of disadvantages in addition to the equipment costs associated with such a configuration.” Akl Decl. ¶¶ 66, 318 (quoting Rae, 2:16-18). For example, there were problems with maintaining locally disposed call processors, particularly when “managing an update of a large number of remote systems.” *Id.* ¶ 318 (quoting Rae, 2:32-37). Where call recording is implemented, “substantial recording media space” is required, which necessitates refreshing the media space, i.e., archiving. *Id.* ¶¶ 66, 318 (quoting Rae, 2:59-64).

To address the limitations of legacy systems, persons of ordinary skill were taking the “enlarged spectrum” of new technologies available at the time of the invention, and migrating them into “jails, prisons and other confinement facilities” to overcome the disadvantages of legacy systems. Akl Decl. ¶¶ 62, 319 (quoting ’447 Application, 1:24-26). To achieve greater efficiency in providing call services to inmates, persons of ordinary skill turned to integration of telephone communication into digital data exchange networks, such as private IP networks or

the IP frameworks transmitted over the internet. Spadaro, 4:25-27. Voice over IP (“VOIP”) was known to “carry calls from a location at which calling services are provided to a centralized call processing platform.” Akl Decl. ¶¶ 67, 319 (quoting Rae at Abstract).

Facing these foregoing problems, persons of ordinary skill in the art would have applied known technologies of Kung to improve the prison call processing system of Gainsboro, which at the time of the invention was ready for such improvements, to yield no more than predictable results. Akl Decl. ¶ 322. Persons of ordinary skill in the art would have combined the off-site central platform for telecommunications services of Kung with the “call management system manag[ing] calls from a plurality of *inmate telephones*” of Gainsboro. *Id.* (quoting Gainsboro, 5:66-67) (emphasis added). Such a combination would have predictably garnered the benefits of “allow[ing] the public telephone systems at various sites to be integrated into the data network easily.” *Id.* (quoting Spadaro, 3:67-4:3). Spadaro further adds that “[t]he distribution of these functions to remote locations has the advantage that the functions can be centralized with the functions being performed at a central administration location.” Spadaro, 4:4-13.

Kung includes “one or more local control devices” to “couple devices [such as telephones] within the customer premise equipment 102 to the rest of the broadband network 1 using any suitable broadband communication mechanism.”

Kung, 3:45-48, 4:26-30. Persons of ordinary skill in the art would have utilized the control devices of Kung to predictably achieve “interconnection between a plurality of customer locations [in the prison, for example] between a plurality of customer locations [in multiple prison facilities, for example] utilizing various interconnection architectures including [IP] telephony or multimedia signals between the customer premises over, for example, the public switched telephone network, Internet, or wireless communication networks.” Akl Decl. ¶ 323 (quoting Kung, 3:31-42); *see also* ’447 Application, 6:15-17 (“centralized or regionalized processing of call control and administrative tasks in accordance with embodiments of the present invention permits simplified and efficient operation of ICSs”).

It would have further been obvious to utilize gateways and routers, such as the broadband residential gateway (“BRG”) of Kung, as control devices within the system of Gainsboro, to provide a connection configured for “analog voice [to be] converted to digital data and packetized for transmission in an appropriate output protocol such as an [IP].” Akl Decl. ¶ 324 (quoting Kung, 4:23-25); (explaining that the residential gateway performs a routing function and citing other examples known in the art of gateways (i.e., Joseph’s gateway devices) configured to connect analog phones with a digital IP network). Such functionality “may be implemented through interfaces on stand-alone units dedicated to such a gateway role ... as well as through ports on routers, access servers, and IP network switches.” *Id.* (quoting ’447

Application, 15:9-11).

The analog voice signal originating from the inmate phones would have been transmitted via a network connection from the gateway (or other means for routing telephonic signals). *See* Kung, Fig. 1 (showing that attempted communications are sent from the gateway 300 to the IP central station via the “HFC”, “HEAD-END HUB”, and “IP NETWORK”); *see also* Akl Decl. ¶ 325. Persons of ordinary skill would have “appreciated that providing communication to a carrier in a digital format, such as SIP [session initiation protocol] or MGCP [media gateway control protocol]” provides “considerable costs advantages” and improved “call quality.” *Id.* (quoting Rae, 8:63-9:12).

It would have further have been obvious to utilize VOIP as a protocol for transmitting telephonic voice signals across the broadband architecture of Kung and to connect a phone call with a remote telephone over the PSTN. Akl Decl. ¶ 326. At the time of the invention, “VOIP systems [were] emerging as candidate implementations for a variety of enterprise communications solutions.” Akl Decl. ¶¶ 67, 326 (quoting ’447 Application, 3:31-4:1).

The system of Gainsboro was ready for the improvement afforded by Kung’s “broadband network providing versatile intelligent conduits that may carry, for example, [IP] telephony or multimedia signals between the customer premises over, for example, the public switched telephone network, Internet, or wireless

communications.” AkI Decl. ¶ 327 (quoting Kung, 3:37-42). Gainsboro is a system “adapted to perform [] improved institutional telephone management” that achieves “*improved security and reduced cost.*” Gainsboro, 3:12-15 (emphasis added). Greater security and reduced cost would have been implemented in Gainsboro utilizing the IP central station of Kung in allowing live call (voice) monitoring and call recording (both of which are claimed features). For example, the multimedia server 222 and conference servers 224 of Kung may be configured with “storage for multimedia messages” and “specialized software” that allows “some callers simply [to] monitor the call without voice interruption while other callers have both voice transmit and receive capabilities.” Kung, 11:30-12:8. Accordingly, it would have been obvious to migrate and adapt the call processing system of Gainsboro into the digital platform of Kung. AkI Decl. ¶ 327.

**2. Claim 1 Is Obvious Over the Combination of Kung and Gainsboro.**

The combination of Gainsboro and Kung teaches every element of claim 1:

[1A] An inmate telecommunication call processing system comprising:

[1B] a plurality of trunk lines of a Public Switched Telephone Network (PSTN);

[1C] at least one telephone terminal for making a telephone call, wherein said telephone terminal is located onsite at an institution;

[1D] a central platform coupled to said plurality of trunk lines and coupled to said at least one telephone terminal for said telephone call,

[1E] wherein said central platform is located offsite from said institution, and

[1F] further wherein said central platform comprises one or more apparatuses for processing said telephone call;

[1G] an administrative workstation for connecting to a said telephone terminal to monitor conversations between said institution without detection by said user; and

[1H] at least one routing means coupled to said telephone terminal and said central platform;

[1I] wherein said one or more apparatuses controls telephonic communication between said at least one telephone terminal and said plurality of trunk lines,

[1J] wherein said one or more apparatuses records said conversations in said telephone call between a user associated with said at least one telephone terminal and an external party, and

[1K] further wherein said one or more apparatuses digitizes audio and stores said audio for caller identification at said institution, and

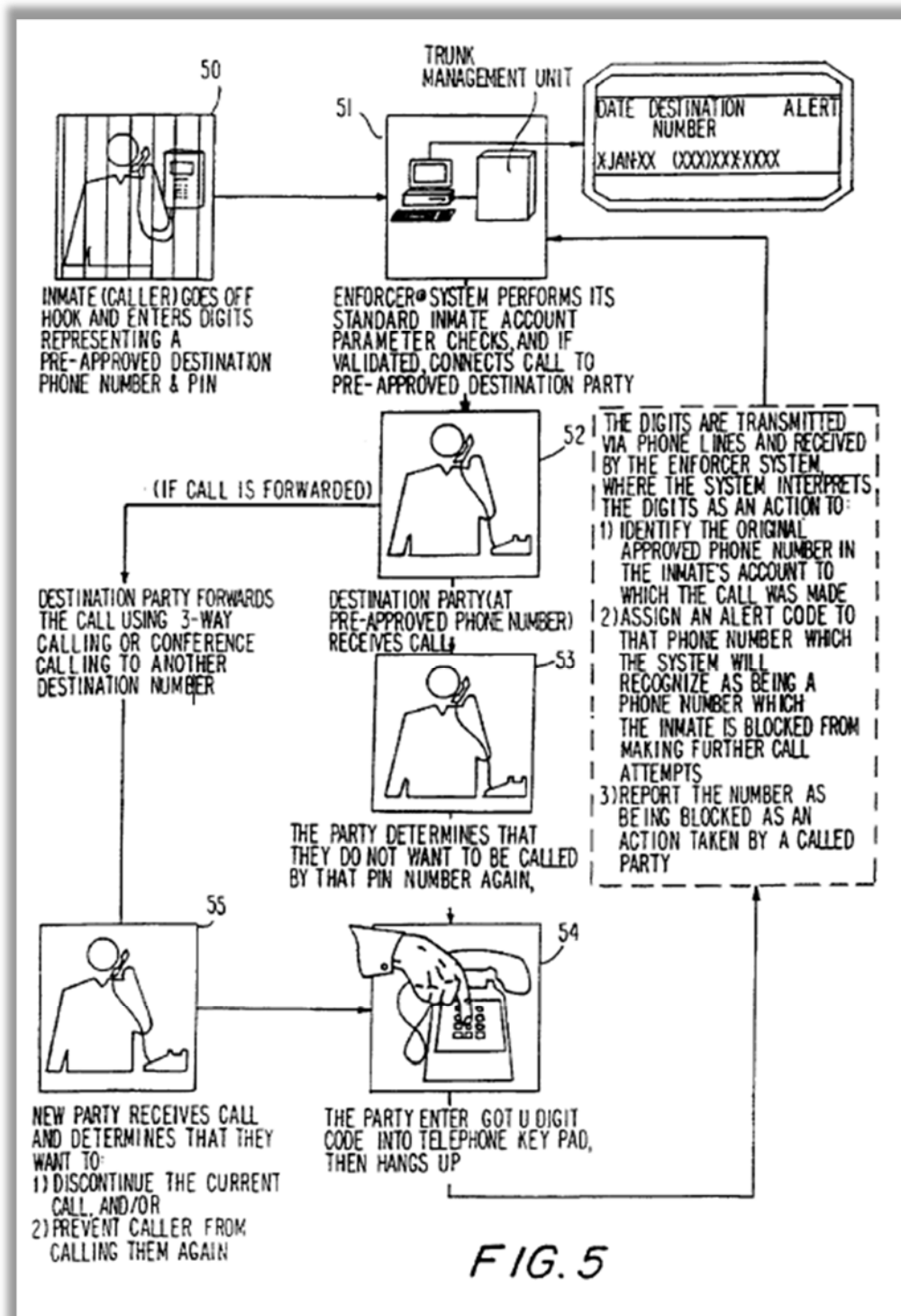
[1L] further wherein said one or more apparatuses communicates with an administrative workstation for billing regarding said telephone call originating from said institution.

'021 patent at column 18, line 50 through column 19, line 14.

**a) Gainsboro Discloses the '021 Patent Preamble (Element 1A).**

The preamble limits the claimed invention if it is “necessary to give life, meaning, and vitality to the claim.” *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999). The preamble of claim 1 of the '021 patent, recites: “[a]n inmate telecommunication call processing system.” Nothing in the limitations of claim 1 or any of the dependent claims suggests that the preamble would breathe life into the claims. Indeed, the preamble does not provide an antecedent basis for any claim limitation, and claims 1-6 do not lack any meaning absent including the preamble. To the extent that the preamble of claim 1 could be limiting, Gainsboro similarly discloses “a call management system [that] *manages calls* from a plurality of inmate telephones 1” and that is “an inmate telecommunication call processing system.” Akl. Decl. ¶¶ 141-142 (quoting Gainsboro, 6:1-2) (emphasis added). Gainsboro further discloses a “call qualification process” shown in Figure 5.

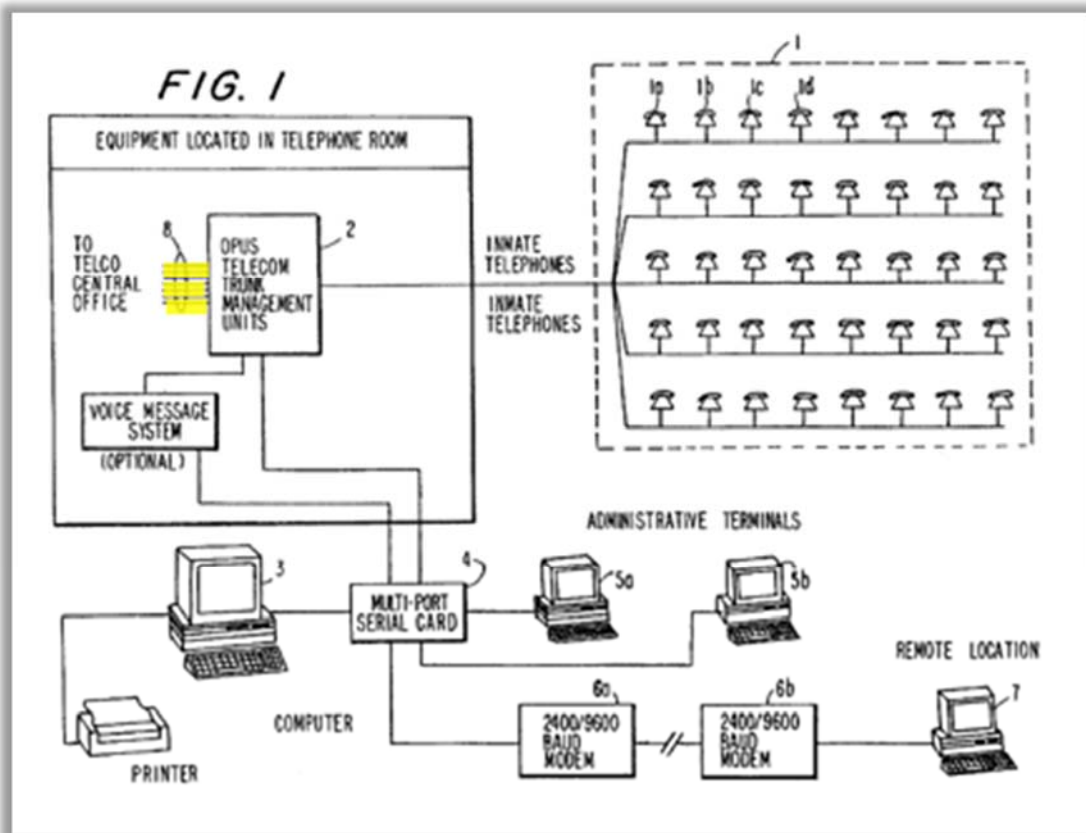




Gainsboro, Fig. 5; see also Gainsboro, 5:55-57.

**b) Gainsboro Discloses Element 1B.**

Gainsboro discloses that its Trunk Management Units 2 controls the connection of individual inmate telephones (for example 1a) to outside telephone lines 8, and electronically monitors connected calls. Gainsboro, 6:2-5.

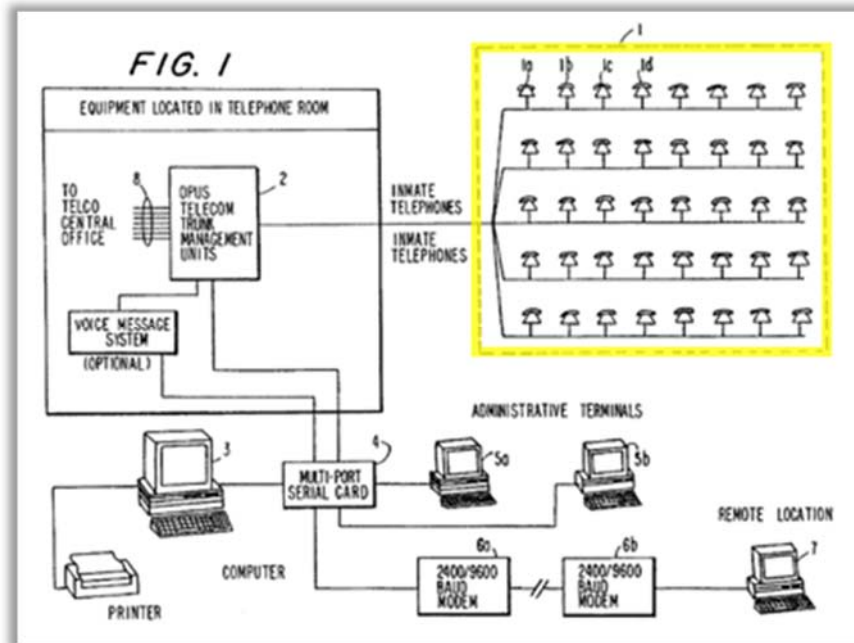


Gainsboro, Fig. 1 (highlighting added) (showing outside telephone lines 8 extending to the central office wherein the lines are coupled to one or more “**Trunk Management Units**”); *see also*, Akl Decl. ¶¶ 143-44. (“A Central Office (CO) is typically a building where all subscriber phone lines are brought together and provided with a means of interconnection in a vast telephone network. These voice networks are referred to as a public switched telephone network (PSTN) or plain old

telephone service (POTS).”). Moreover, “Gainsboro refers to decoding messages on a ‘voice out central office’ line 45C to play messages to the outside line 42b. This analog signal refers to the analog signal going to the central office (CO) of a PSTN.” *Id.* (citing Gainsboro, 8:21-29). This is also consistent with Kung, which discusses the analog nature of the PSTN connected to the Central Office. *See* Kung, 1:30-40. (“[A] PSTN system with call waiting requires a completed circuit at least to the central office.”). Thus, Gainsboro’s outside telephone lines 8, discloses Element 1B “a plurality of trunk lines of a Public Switched Telephone Network.” *See also* Akl ¶ 145 (explaining that combining Gainsboro’s system with that of Kung, would still maintain the call connection functions of Gainsboro).

**c) Gainsboro Discloses Element 1C.**

Gainsboro discloses in Figure 1 that the “call management system manages calls from a plurality of ***inmate telephones***” located onsite at the institution. Gainsboro, 6:1-5 (emphasis added) (discussing connecting and monitoring calls from individual inmate telephones to outside telephone lines). “Inmate telephones are generally located onsite at an institution because it would be impractical and dangerous to move inmates off-site every time they were allowed to make a phone call.” Akl Decl. ¶ 147.



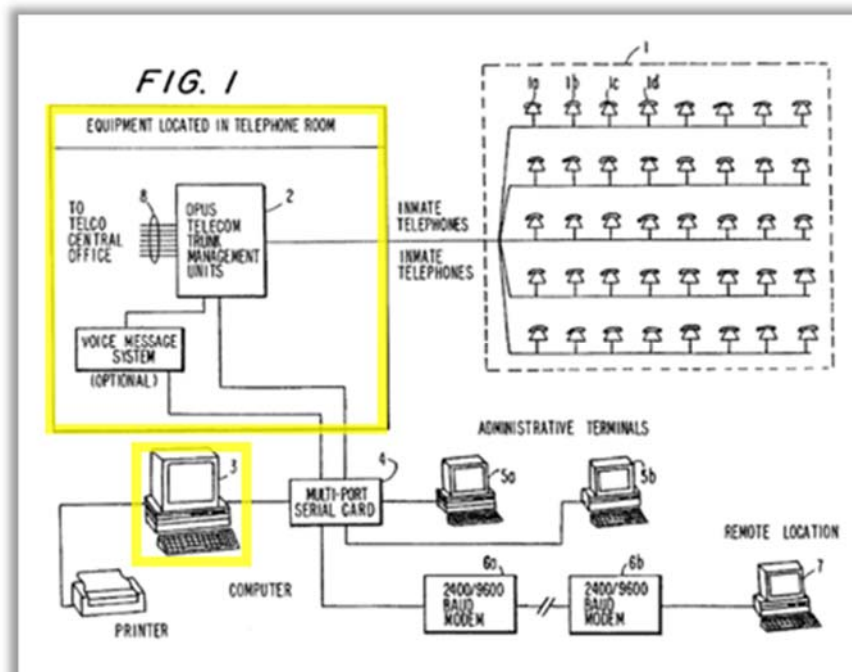
Gainsboro, Fig. 1 (highlighting added) (showing outside inmates telephone lines 1 located at the prison).

**d) Gainsboro Discloses Element 1D.**

Gainsboro discloses that the “apparatus for managing telephone activity in an institution includes ... a computer control unit (CCU)” (reference numeral 3), coupled to the TMU, “for controlling the connection of the institutional telephones to the outside telephone lines.” Gainsboro, 4:7-28. The CCU is central to the system as well as central in function, and receives a number to be called and a PIN from an inmate as a means to authenticate the inmate’s permission to make the call. Akl Decl. ¶ 148 (citing Gainsboro, 9:1-27). Alternatively, it would have been obvious to include the TMU as the central platform since it is also central with respect to the entire system as well as having centralized functions. Akl Decl. ¶ 149. Additionally,

it would have been an obvious design choice to keep both the CCU and the TMU separate from the inmate population (e.g., off-site) as it would likely be problematic if inmates were allowed to be in close proximity to sensitive telephonic equipment.

*Id.*



Gainsboro, Fig. 1 (highlighting added) (showing a central platform comprised of the CCU connected to the TMU). The TMU “selectively connect[s] the institutional telephones to one or more outside telephone lines.” Gainsboro, 4:10-12. It would have been understood that the TMU connected to the CCU provides a “central platform” through which users, such as inmates at the inmate telephones, can access outside telephone lines and other services provided by the call management system. Akl Decl. ¶¶ 148-49 (explaining also that the CCU is central to the system and

provided a computing platform for the system).

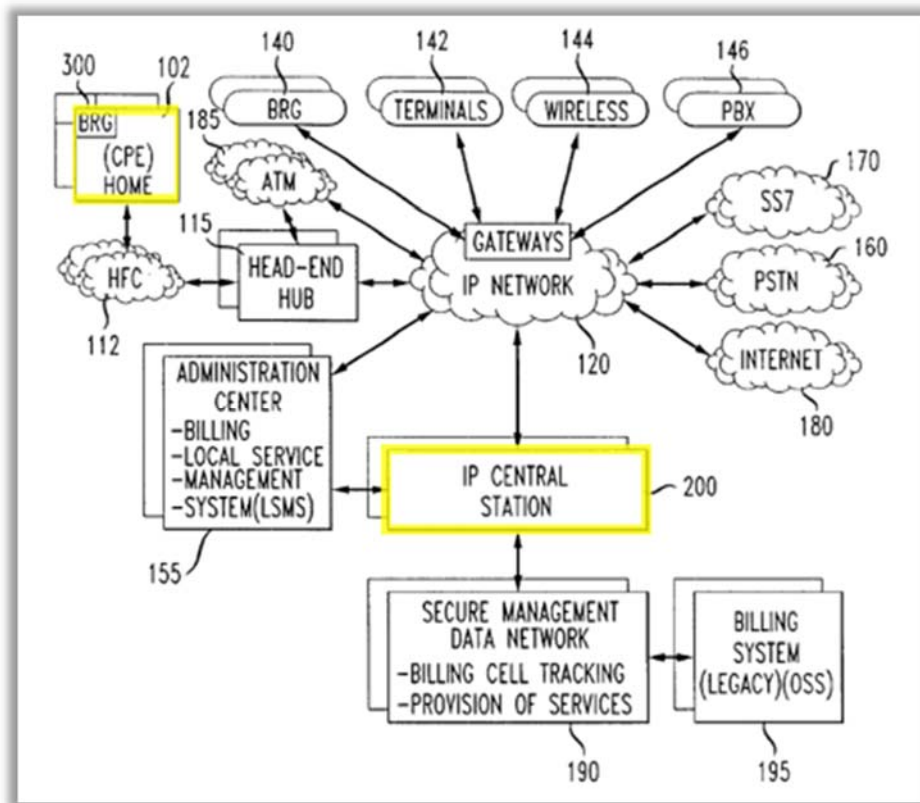
**e) Gainsboro in Combination with Kung Discloses Element 1E.**

Gainsboro does not expressly disclose that the TMU and CCU, functioning as a central platform for call management system services, is located offsite from the prison institution. *See, e.g.*, Gainsboro, Figure 1 (indicating that the TMU is “located in telephone room”). But, as explained, *supra*, with respect to Element 1D, it would have been an obvious system design choice to do so. Akl Decl. ¶ 149 (explaining that it would have been an obvious design choice to keep both the CCU and the TMU separate from the inmate population).

Regardless, the reference Kung resolves this difference between Gainsboro and the claims because Kung expressly discloses a central platform for telecommunications services that is off-site from the location at which users access outside telephone lines. Akl Decl. ¶¶ 151-52. Specifically, each customer location has “premises equipment” units 102, that could, for example, include a “plain old telephone system (POTS) phone(s),” which would be understood to be legacy telephones that operate on a circuit switched telephone network, such as the PSTN. Kung, 3:52-57. The premises equipment also contains “local control devices” that “couple devices [such as telephones] within the customer premise equipment 102 to the rest of the broadband network 1 using any suitable broadband communication mechanism.” Kung, 3:45-48, 4:26-30. The control device may be the BRG 300 that

provides a connection configured for “analog voice [to be] converted to *digital data* and packetized for transmission in an appropriate output protocol such as an [IP].” Akl Decl. ¶ 153 (citing Kung, 4:23-25) (emphasis added). Moreover, the disclosed residential gateways 300 “may also be disposed in a business or other location.” Kung, 3:49-52.

Kung also discloses an “IP central station 200 [that] may be configured to manage voice information transfer from the public switched telephone network 160, through the IP network 120, and *into and out of one or more devices such as those connected to a broadband residential gateway 300.*” Kung, 5:46-50 (emphasis added). In Kung, “the broadband residential gateway 300 utilizes a hybrid fiber-coaxial plant 112 *to couple the broadband residential gateway 300 to the rest of the broadband network.*” Kung, 4:30-33 (emphasis added).



Kung, Fig. 1 (highlighting added) (showing that the IP central station is located off-site from the customer premises). Thus, it would have been understood that the central IP station of Kung operates as an off-site central platform for call processing services provided to customers using telephones at a customer premises. Akl Decl. ¶¶ 153-54 (explaining that the IP central station implemented in Gainsboro teaches a “central platform comprising one or more apparatuses for processing a phone call”); *see also* Akl Decl. ¶ 159.

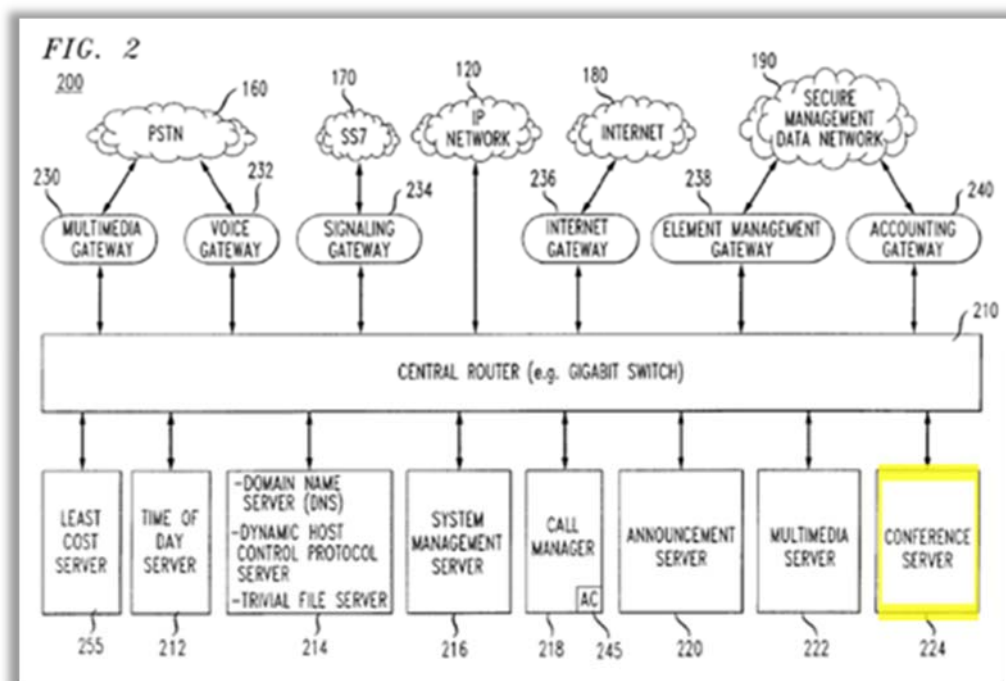
It would have been obvious to combine the system of Kung with the system of Gainsboro so that the services provided by the CCU or TMU, operating as a central platform, are moved offsite from the inmate telephones located at the prison.



Akl Decl. ¶ 153-54. Additionally, Gainsboro would benefit from Kung’s ability to adapt to legacy systems as well as newer packetized systems, allowing the facility to add newer technology without the need to change out the entire system. *Id.*

**f) Gainsboro in Combination with Kung Disclose Element 1F.**

The services provided by the central platform of Kung, i.e., the IP central station, are provided by one or more servers, one of which is a “call manager (CM) server 218” for processing phone calls.



See Kung, Fig. 2 (highlighting added) (showing that the conference server operates within the IP central station 200 for call processing). Kung discloses that the call manager 218 also “provide[s] for *call processing functions* such as a standardized call model for processing the various voice connections such as voice over IP calls.”

Kung, 9:47-56 (emphasis added) (adding that the call manager “provides a centralized call control center for supporting call set-up and tear-down in the broadband network 1”); *see also* Akl Decl. ¶ 157.

It would have been obvious to utilize the call processing functions of the call manager 218 in the modified system of Gainsboro. Akl Decl. ¶ 158. In particular, the CCU of Gainsboro discloses a similar call processing functionality:

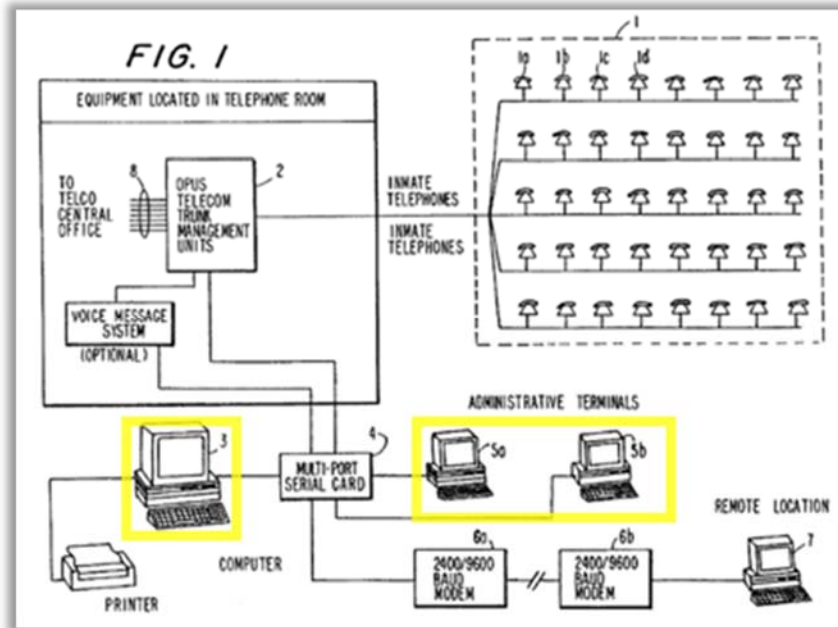
In one direction, CCU directs TMU to connect, record, passively monitor and terminate calls, and to download and/or play prerecorded messages to an inmate or outside call recipient. In the other direction, TMU monitors the real-time status—i.e. off-hook, DTMF tones, voltage spikes and rapid impedance changes—of institutional and outside telephone lines.

Gainsboro, 6:32-45. Thus, the call manager 218 hosted on (and as an apparatus of) the IP central station of Kung would have been implemented within the call management system of Gainsboro, including by utilizing workstations operating software for call processing, to achieve the same call connection and set-up functions as the CCU/TMU while gaining the hybrid system benefits of Kung. In processing of calls and authentication of users within the system of Gainsboro, the IP central station of Kung, as a digitized telephone platform controlled by software (that is associated with an administrative workstation), comprising the call manager 153, and connected to an institution via a LAN or WAN and further connected to the

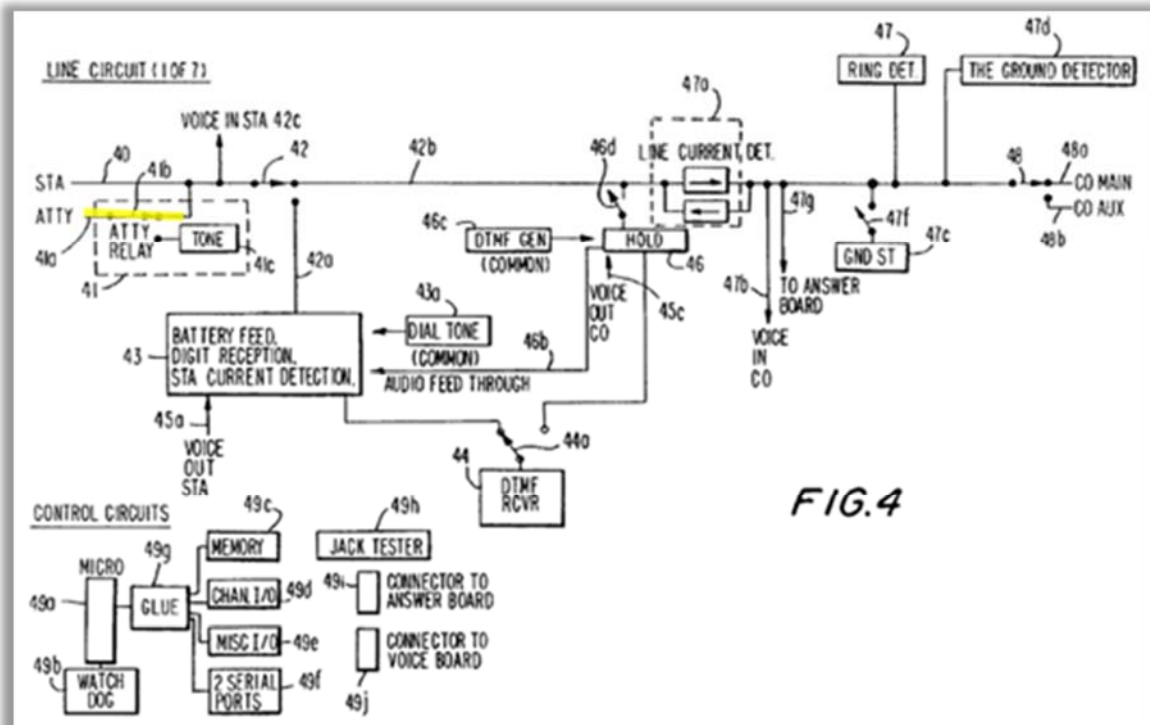
PSTN via an IP framework discloses a “central platform comprising one or more apparatuses.” Akl Decl. ¶¶ 154, 159 (explaining that the system of Gainsboro modified to include the off-site IP central station of Kung teaches a “central platform”). Additionally, because of the generalness of the term “one or more apparatuses,” any or all, either separately, or in combination, of the apparatuses identified, can could serve as the claimed “one or more apparatuses.” *Id.*

**g) Gainsboro Discloses Element 1G.**

Gainsboro discloses that it can selectively monitor conversations both by a live listener and with passive monitoring. “[P]rison officials can selectively invoke live monitoring to listen in on any call in progress” and “passively—that is, without in any way monitoring or recording what is actually being said—monitor inmate-to-attorney calls.” Gainsboro, 2:65-67; 4:60-65. It would have been obvious to use Gainsboro’s CCU or TMU as an “administrative workstation” in order to passively monitor inmate’s phone conversations i.e., without detection to avoid tipping off the inmates as to when they are being monitored. Akl Decl. ¶ 162-64. “In one direction, CCU directs TMU to connect, record, *passively monitor* and terminate calls.” Gainsboro, 6:38-42. The CCU is preferably a personal computer or larger computer “configured to operate under a suitable operating system.” Gainsboro, 7:3-7.



Gainsboro, Fig. 1 (highlighting added). “Real-time control software manages the real-time activity of the system and responds to communications from TMU and user inputs from CCU or terminals 5a-b and 7.” Gainsboro, 7:22-24. An administrator or a user can utilize system software to support “real-time monitoring of inmate telephone calls and alerts” Gainsboro, 7:25-40. It would have been advantageous that the CCU or the administrative terminals would have been utilized by prison officials or other administrators as an administrative workstation. For example, a prison official could use the CCU to connect to an inmate telephone, via the connections shown in Figure 2, to monitor conversations between inmates at the institution and external parties. Akl Decl. ¶¶ 162-63.



Gainsboro, Fig. 4 (highlighting added). Additionally, it would have been understood from the circuit in Figure 4, that it would not have likely been configured to provide audio listening only. Akl Decl. ¶ 164. It also would have been obvious to tap into the conversation via line 41a without detection by the user, i.e., the inmate, by silently monitoring the line. *Id.* ¶ 165 (explaining that combining the system of Gainsboro and the system of Kung would have still maintained the capability to connect to a telephone terminal to monitor conversations, as taught in Gainsboro, and citing Kung, 12:1-3).

### **h) Gainsboro in Combination with Kung Discloses Element 1H.**

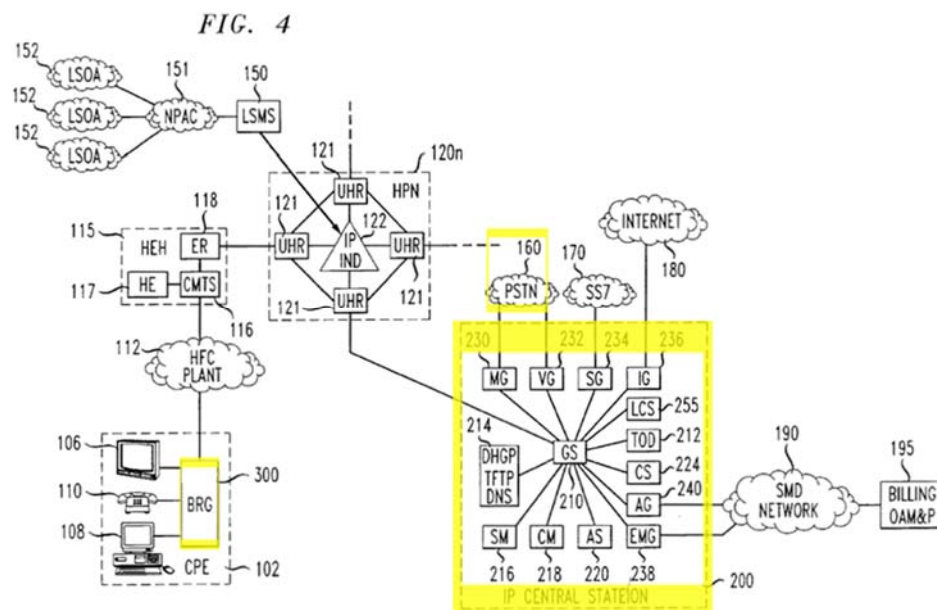
Gainsboro in combination with Kung discloses Element 1H, which includes

the means-plus-function limitation “routing means.” Gainsboro discloses the “TMU includes circuitry to selectively connect inmate phones with outside lines.” Gainsboro, 7:62-67. Figure 1 shows that the CCU and TMU are connected over a communication link so that the TMU routes a call placed by an inmate through the CCU 2, which determines whether to connect the call to outgoing trunk lines 8 and on to the PSTN. Akl Decl. ¶ 166.

Kung discloses (1) a router located onsite at an institutional facility, (2) a communication link connecting the router to the telephone, and (3) a communication link connecting the router to an off-site central platform. First, Kung discloses that the broadband residential router (“BRG”) acts as a router in that it contains “smart buffer logic” that included “routing algorithms.” Kung, 21:32-34, 22:18-22; *see also* Akl Decl. ¶ 168, 170. Kung also describes that the BRG is “onsite” (as opposed to being located at the “central platform”) in that it is part of the customer premise equipment and is preferably located in a residence or a business. Kung, 3:46-52; *see also* Akl Decl. ¶ 168. Second, Kung discloses a communication link connecting the (BRG) router to the telephone. Kung 3:52-65 (describing how the BRG interfaces with other “onsite” devices including plain old telephone and IP-based phones); *see also* Akl Decl. ¶ 169. Third, Kung discloses a communication link connecting the (BRG) router to the central platform. Kung, Fig. 1 (illustrating the network connectivity between the BRG and the IP Central Station through a hybrid fiber

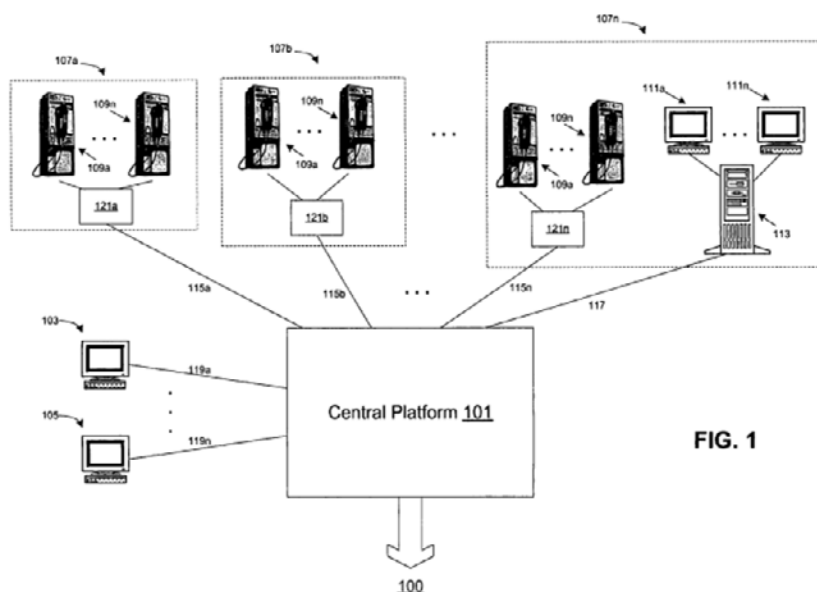
coaxial plant 112, the head-end hub 115, and the external IP networks 120n); *see also* Akl Decl. ¶ 168, 172. For the foregoing reasons, Kung discloses the “routing means” structure: “a router located onsite at an institutional facility, a communication link connecting the router to said telephone terminal, and a communication link connecting the router to said central platform.”

It would have been obvious to use BRG to route calls over a VoIP frame relay to an off-site central platform since it can provide the benefit of decoding DTMF and selectively connecting inmate phones with remote parties, while still providing the same functionality of the TMU and CCU in routing calls. Akl Decl. ¶¶ 169-72 (further explaining that the gateway of Kung would have been integrated with only ordinary skill and with no more than reasonable experimentation, for example by utilizing telephony ports).



Kung, Fig. 4 (highlighting added).

Furthermore, as shown in Figure 4, copied above, Kung's BRG in routing calls from telephones 110 located at the customer premises 102 through the IP central station 200 to an outgoing trunk, namely, lines and trunks out to the PSTN 160 also discloses "routing means" as shown in Figure 1 of the '021 patent, even under GTL's proposed construction in related litigation set out in Section IV(D)(1). Akl Decl. ¶ 172.



'021 patent, Fig. 1.

Similar to its function in the Kung system in Figure 4, the BRG discloses a router (such as routers 121a-n, shown in Gainsboro's Figure 1, copied above) that routes calls from telephones (such as telephones 109a-n) to an off-site platform (such as central platform 101) to an outgoing trunk leading to the PSTN (shown as arrow



100 in Figure 1). Akl Decl. ¶ 172.

**i) Gainsboro in Combination with Kung Discloses Element 1I.**

In Gainsboro, the “TMU includes circuitry to selectively connect inmate phones with outside lines.” Gainsboro, 7:63-65. It would have been obvious to combine the call manager 218 of Kung’s IP central station 200 to improve the functions of the TMU of Gainsboro to “provide centralized system intelligence and control of voice and/or data IP packet.” Akl Decl. ¶¶ 173-174 (citing Kung, 7:30-33). Furthermore, “the call manager 218 provides a centralized call control center for supporting call set-up and tear-down in the broadband network 1.” Kung, 9:48-50; *see also* Akl Decl. ¶ 174 (explaining that the BRG of the IP central station 200 of Kung similarly controls telephonic communications, citing Kung 16:50-53, 9:47-10:17). It would have been with ordinary skill and reasonable experimentation to utilize the call manager 218 as an apparatus of the IP central station 200 for call control of inmate phones. Akl Decl. ¶ 175 (citing Kung, 10:28-33).

**j) Gainsboro Discloses Element 1J.**

Gainsboro discloses that “[t]he TMU can be programmed *to enable associated recording equipment to record telephone calls.*” Gainsboro, 4:34-36 (emphasis added). Additionally, the CCU can direct the TMU to “connect, *record*, passively monitor and terminate calls.” Gainsboro, 6:39-40 (emphasis added); *see also* Akl Decl. ¶ 176. Gainsboro also discloses that the TMU can *digitally record*

audio such as a “sample of the caller’s voice.” The CCU then compares the digitized sample with a stored voice print to verify the identity of the caller. It would have been obvious to add Gainsboro’s TMU recorder since it is in the signal path of the phone call and can selectively pick which line to record. Akl Decl. ¶¶ 177-78 (further explaining that combining the system of Gainsboro with Kung would have still maintained and been compatible with the call recording functions of the “recording equipment” of Gainsboro).

**k) Gainsboro Discloses Element 1K.**

As explained above in Section VI(A)(2)(j), *supra*, Gainsboro discloses that the TMU is an apparatus that can “*record telephone calls.*” Gainsboro, 4:34-36 (emphasis added). Gainsboro also discloses that the TMU can “digitize,” i.e., digitally record audio such as a “sample of the caller’s voice.” *Id.*, 5:19-23 (“The CCU then compares the digitized sample with a stored voice print, to verify the identity of the caller.”).

The CODEC circuit, which is a circuit that converts voice signals between analog and digital, supports “voice monitoring and/or verification functions.” Gainsboro, 8:27-29. As part of a verification function, Gainsboro further discloses that “when an inmate first enters a corrections facility, he/she may be instructed to recite his/her name *into a voice recorder via a microphone.*” *Id.*, 9:50-53 (emphasis added). This voice recording “can be *stored* permanently into a file associated with

that inmate's calling account and/or PIN, and can be automatically replayed as desired." *Id.*, 9:53-55; 9:43-45 (emphasis added).

Gainsboro "may include biometric voice verification features." Gainsboro, 5:19-20. "The TMU, for example, may digitize a sample of the caller's voice." *Id.*, 5:19-23. To verify the identity of the caller, "[t]he CCU then compares the digitized sample with a stored voice print." *Id.*, 5:19-23. The verification functions of the CCU are also performed by the call manager 218 of Kung which discloses that the "call manager 218 may include an authentication server (AC) 245 ... to verify the identity of the calling or called party." Kung, 10:39-43; *see also* Akl Decl. ¶¶ 187-88 (explaining that Gainsboro's caller identification functions would have been performed within the authentication server, described at Kung, 10:39-43, as one in a set of apparatuses that perform the functions of the IP central station of Kung). Moreover, it would have been obvious to use the same TMU digital recorder to store the voice sample because the sample could easily be stored locally for efficient retrieval and comparison. Akl Decl. ¶ 185. Additionally, one of ordinary skill in the art would have understood that both the digitized sample and the print would be stored, at least temporarily, before a comparison could be made. *Id.* ¶¶ 185-87 (further explaining how combining the system of Gainsboro with Kung would have still maintained and been compatible with digitizing audio and storing said audio for caller identification taught in Gainsboro).

**1) Gainsboro Discloses Element 1L.**

In the system of Gainsboro, an inmate places a call by providing a PIN and the “number to be called,” which are forwarded to the CCU. Gainsboro, 9:1-20. The CCU checks whether “there are sufficient funds in the inmate’s debit account to make the call. *Id.* The CCU (or terminals 5a-b and 7) are disclosed as workstations, i.e., personal computers. Akl Decl. ¶ 190 (citing Gainsboro, Fig. 1, 7:3-16). Users at these workstations provide inputs “to check[] inmate debit (i.e. paid-in-advance) accounts.” Gainsboro, 7:23-30. The TMU would have been understood to be an apparatus that communicates with the workstations, namely the CCU and terminals 5a-b and 7, that are utilized for billing regarding the telephone call placed by the inmate. Communication with an administrative workstation for billing purposes is also performed by the call manager 218 of Kung, which discloses that an “accounting gateway may be configured to receive messages representing events from the call manager 218.” Akl Decl. ¶ 191 (citing Kung, 14:34-37 and explaining that administrative workstations at billing centers would receive call event information from call manager 218 via the accounting gateway); *see also id.* (explaining that combining Gainsboro with Kung would have been compatible with the apparatuses of a central platform communicating with an administrative workstation for billing).

**3. Claim 2 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 2 depends from claim 1, but merely adds “wherein said routing means routes attempted telephonic communication to said central platform.” In an embodiment where Gainsboro’s CCU is the claimed central platform, Gainsboro discloses that, “[t]o place a call,” the inmate enters his PIN number and the “number to be called.” *See* Akl Decl. ¶ 193. As discussed, *supra*, in Section VI(A)(2)(h), the IP central station of Kung (operating in the system of Gainsboro) discloses the claimed routing means since it routes calls from on-premises telephones to a central platform by utilizing a communication link connecting a gateway (which functions as a router) to the telephone, and a communication link connecting the gateway to the central platform. Akl Decl. ¶¶ 167-172 (also explaining that Kung’s BRG also discloses a routing means under GTL’s proposed litigation construction). One having ordinary skill in the art would have understood that “attempted telephonic communication” using the PIN and number to be called would have been routed through the TMU routing means to the central platform. Akl Decl. ¶ 193.

The system of Kung discloses an off-site central platform. In Kung, “[t]he broadband residential gateway 300 may be configured as the interface unit between the remainder of the customer premise equipment 102 devices and the external network.” Kung, 16:50-52. The BRG is configured to provide functionality to “one or more telephone connections such as plain old telephone service (POTS) phones.”

Kung, 16:63-17:6. The BRG includes “one or more telephony port modules 332 for interconnecting one or more analog and/or digital telephones.” Kung 17:36-37. The gateway 300 further includes a “CODEC ... configured to convert the analog voice signal into IP packets for transmission over one or more data ports 334. Kung, 19:5-8. Persons of ordinary skill in art would have understood that an attempted call placed at an inmate phone would be routed from the TMU, as a routing means. Akl Decl. ¶ 194. This same functionality is maintained in a central platform located off-site, where the gateway routes calls made at analog telephones to the external network, and where the IP central station 200 is located. *Id.*

**4. Claim 3 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 3 depends from claim 1, but merely adds “wherein said local user is only granted access to place a telephone call if an authentication means verifies identification information as indicative of a valid user.” Gainsboro discloses the use of a user-specific personal identification number (“PIN”) and information (the phone number to be called) that is entered by the user (the inmate) for comparison with information stored in a database for that specific user. Akl Decl. ¶ 197 (citing Gainsboro, 9:1-6). Gainsboro also discloses utilizing a PIN and “biometric voice verification features” as discussed, *supra*, in Section VI(A)(2)(k). To prevent PIN abuse, a voice data file comprised of the inmate’s voice (e.g. a recording of the inmate’s name) is scanned, i.e. converted to a digital format, and stored permanently

in a database containing the inmate's calling account "and/or PIN." Akl Decl. ¶¶ 196-97 (citing Gainsboro 5:19-23, 31-32; 8:21-34; 9:43-55). To verify the identity of the caller, as indicated by the user providing a PIN, "[t]he CCU then compares [a] digitized sample [of the caller's voice] with a stored [authorized] voice print." *Id.* Furthermore, the verification functions of the CCU are also performed by the call manager 218 of Kung, which discloses that the "call manager 218 may include an authentication server (AC) 245 ... to verify the identity of the calling or called party." Kung, 10:39-43. Claim 3 is obvious for at least the same reasons, and furthermore the call manager discloses the "authentication means" by verifying the identity of a party (using either a PIN or a party's voice). Akl Decl. ¶¶ 196-97. For example, Gainsboro also discloses that the TMU can *digitally record* audio such as a "sample of the caller's voice." The CCU then compares the digitized sample with a stored voice print, to verify the identity of the caller. *See* Gainsboro, 5:19-23. Regardless of which party is the caller, one having ordinary skill in the art would have recognized that Gainsboro's voice identification technology would work the same regardless of where the call originates. Akl Decl. ¶¶ 196-97, 188 (explaining that Gainsboro's caller identification, using voice samples functions would have been performed within the authentication server of Kung).

**5. Claim 4 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 4 depends from claim 1, but merely adds that "said telephonic

communication is only allowed upon verification of acceptable contact between said local and said remote user.” Gainsboro discloses “biometric voice verification features” as discussed, *supra*, in Section VI(A)(2)(k) with respect to voice identification, which would have been performed within the authentication server of Kung. Akl Decl. ¶¶ 188, 197. While claim 4 further appears to require approval of the contact prior to allowing communication between a local user and a remote user, Gainsboro has an embodiment that discloses this element. *See* Gainsboro, 3:35-61. Gainsboro discusses a goal of creating a customizable telephone management system with a central database. *Id.*, 3:35-40. In one embodiment, Gainsboro discloses a contact approval method for:

- (1) identifying an institutional caller (the “calling party”) who wishes to place an outside call to an outside recipient (the “called party”);
- (2) blocking the institutional caller and—while the institutional caller’s line (earpiece and/or mouthpiece) remains blocked—
  - (a) calling said outside recipient (called party),
  - (b) providing the identity of said institutional caller to said outside recipient and
  - (c) receiving a control code from said outside recipient; and
- (3) determining, in response to said control code, whether to connect the institutional caller to the outside recipient, and optionally, whether to indicate any of a plurality of messages to the calling party, e.g., an inmate.

Gainsboro, 3:43-54. Thus, communication is only allowed if both parties agree, i.e.,



acceptable contact. Akl Decl. ¶ 202. One having ordinary skill in the art would have found claim 4 obvious over the combination of Gainsboro and Kung because the combination would increase the security of communications and curb harassing calls. *See also id.* ¶ 203.

**6. Claim 5 Is Obvious Over the Combination of Gainsboro over Kung.**

Claim 5 depends from claim 1, but merely adds that “said central platform digitally records said telephonic communication between said local and said remote user.” Claim 5 is obvious for the same reasons as discussed in Section, VI(A)(2)(j), *supra*. Further, Kung’s off-site IP central station was identified, earlier in Section VI(A)(2)(e), as a central platform that would have replaced the TMU in Gainsboro’s system, while maintaining other claimed functions of the central platform. Akl Decl. ¶¶ 205-06.

**7. Claim 6 Is Obvious Over the Combination Gainsboro over Kung.**

Claim 6 depends from claim 1, but merely adds “wherein said system further comprises at least one workstation for monitoring, controlling, storing, and billing related to said telephonic communication.” Gainsboro discloses that its CCU software “manages real-time activity [and responds to] user inputs from CCU 3 or terminals 5a-b and 7,” as administrative workstations. Gainsboro, 7:22-25. These workstations support the following functions:

(1) establishment and configuration of individual inmate data and monetary accounts;

(2) *checking of inmate debit (i.e. paid-in-advance) accounts*;

(3) setting of global (i.e. institution wide) and individual *restrictions on telephone access*;

(4) *real-time monitoring of inmate telephone calls* and alerts (based on call content, security breaches, etc.), along with the ability to cut off inmate calls individually or globally;

(5) *storing and reporting of detailed inmate call details and account information*; and

(6) *storing and reporting of telephone usage data*.

Gainsboro, 7:25-40 (emphasis added). The administrative workstations of Gainsboro, therefore, support monitoring (“real-time monitoring of inmate telephone calls”), controlling (“setting ... restrictions on telephone access”), storing (“storing and reporting of detailed inmate call details and account information” and “storing and reporting of detailed inmate call details and account information”), and billing (“checking of inmate debit (i.e. paid-in-advance) accounts”) functions. Akl Decl. ¶¶ 208-12 (addressing other instances where the administrative workstations of Gainsboro support the basic functions of monitoring, controlling, storing, and billing related telephonic communications). Moreover, one having ordinary skill would have been motivated to include these functions to allow facilities to better keep track of inmate phone debit accounts. *Id.* ¶ 213 (further explaining that it would have been obvious that a prison facility would have utilized a workstation connected

to the gateway 300 of Kung, for example utilizing the administrative center 155 of Figure 1, to access monitoring, controlling, storing and billing functions of the IP central station 200).

**8. Claim 7 Is Obvious Over the Combination of Gainsboro and Kung.**

According to the Patent Owner's admission during prosecution, claim 7 covers the same subject matter as claim 1: "Applicant points out that the limitations of claim 7 are analogous to those discussed above for claim 1." '021 File History at 68. Claim 7 has slight differences in the following elements:

[7B] *at least one network connection coupled to a central platform;*

[7D] *at least one gateway* connected between the at least one telephone terminal and the central platform; and

[7E] an administrative workstation for connecting to a telephonic communication between said at least one telephone terminal *and at least one gateway* without detection by said at least one telephone terminal;

[7G] wherein said one or more apparatuses controls said telephonic communication between said at least one telephone terminal *and said at least one gateway,*

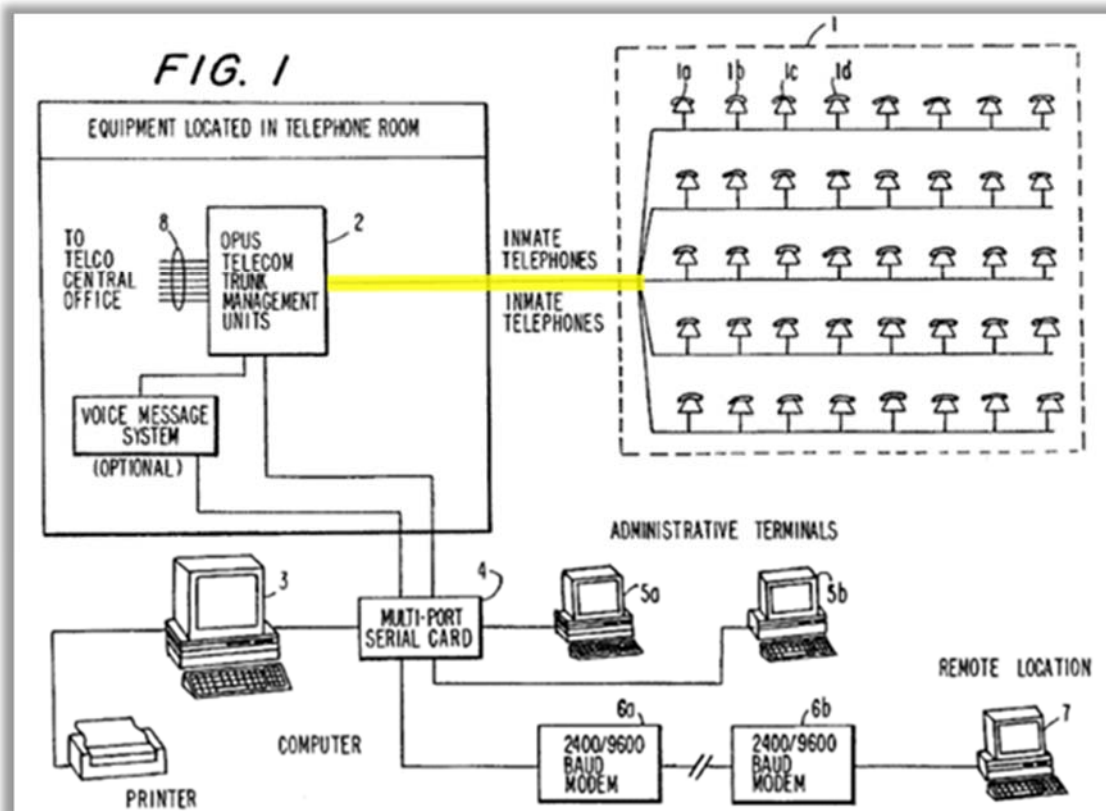
'021 patent, 19:33-60 (emphasis showing the minor differences between claim 7 and claim 1).

Independent claims 1 and 7 disclose similar systems with the substitution of

system elements that were common to telephone systems at the time of the invention. Akl Decl. ¶ 215 (explaining that Elements 7A, 7C, and 7E-7J, are the same or obvious variants of Elements 1A, 1C, 1G, 1F, 1I, 1J, 1K and 1L, respectively). Dr. Akl further explains that persons of ordinary skill would have further understood that a telephonic communication “between at least one telephone terminal and said at least one gateway” claims in Elements 7E and 7G, in the same or a similar manner as claim 1, that the communication is between the local user (i.e., an inmate) at the claimed “telephone terminal” and the remote user that is reached through the claimed gateway (or through “trunk lines” in Element 1I). *Id.* As discussed below, the combination of Gainsboro and Kung disclose the additional system elements of claim 7 (i.e., the network connection of Element 7B and the gateway recited in Elements 7D, 7E, and 7G), and are, in any event, an obvious variation of the system of claim 1 in view of Gainsboro and Kung. *Id.*

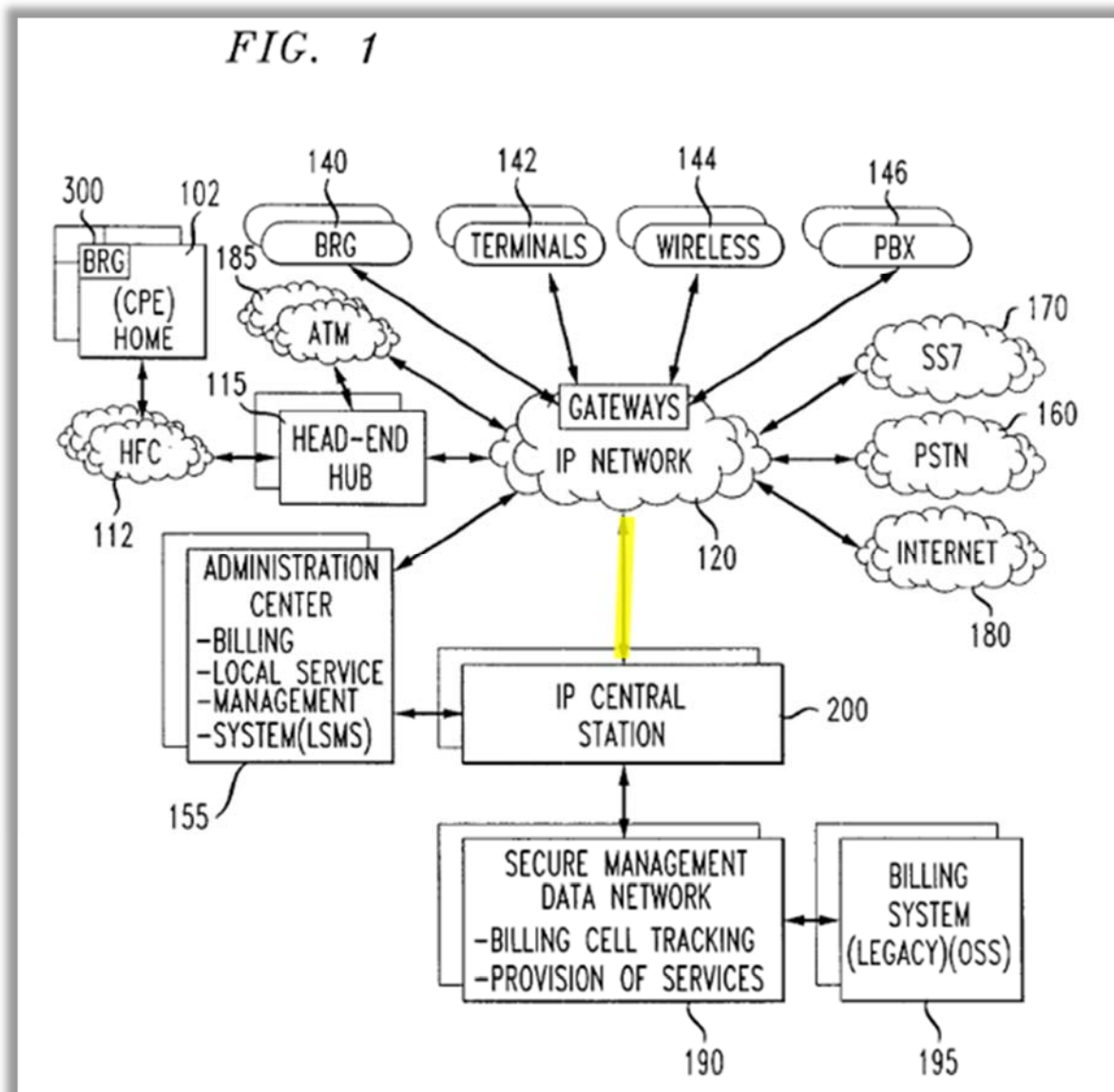
**a) Gainsboro In View of Kung Discloses Element 7B.**

As shown in Figure 1, “TMU controls the connection of individual inmate telephones (for example 1a) to outside telephone lines 8, and electronically monitors connected calls.” Gainsboro, 6:2-5 (emphasis added).



Gainsboro, Fig. 1 (highlighting added) (showing network connections coupled to a central platform).

Such a network connection is further found in Kung, where management and control of access of institutional telephones is provided over the connection between the residential gateway 300 and the IP central station 200.

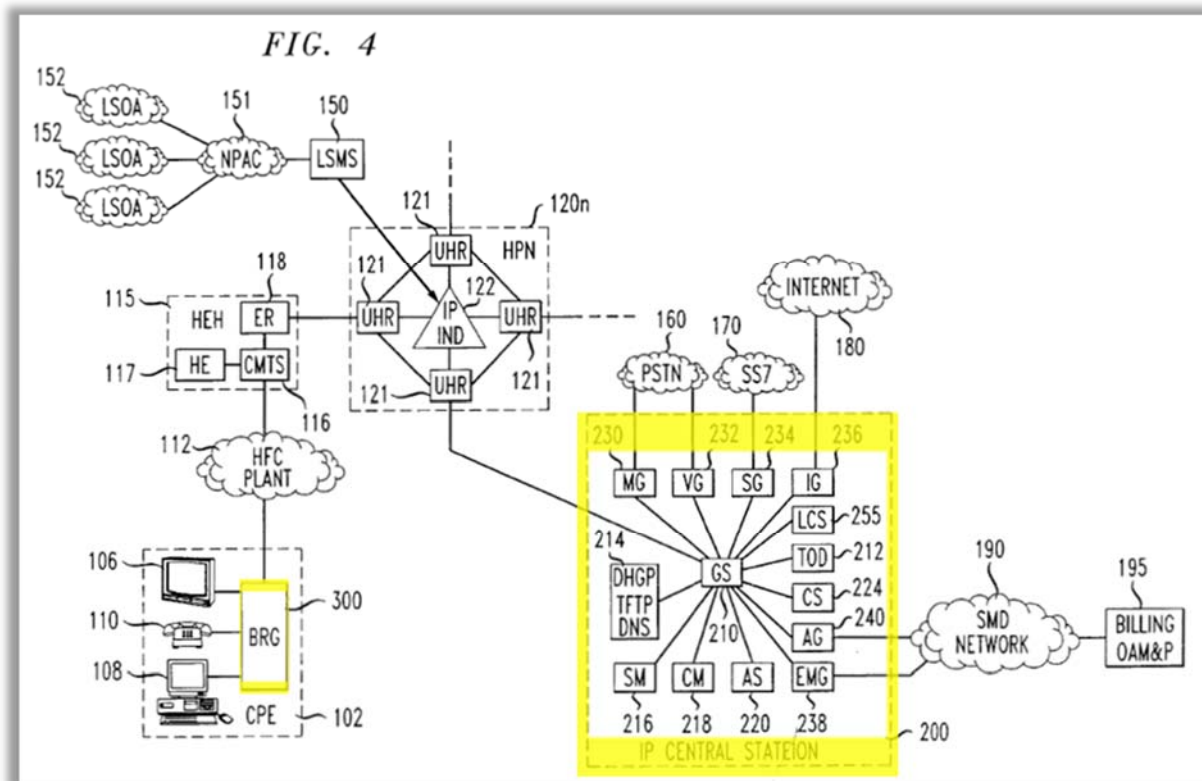


Kung, Fig. 1 (highlighting added) (showing network connection coupled to IP central station). “[T]he IP central station 200 may be configured to manage voice information transfer from the public switched network 160, through the IP network 120, and into and out of one or more devices such as those connected to a broadband residential gateway.” Kung, 5:46-50. Persons of ordinary skill would have understood that the connection coupled to the IP central station extending to the IP

Network 120 is a network connection that ties together the various services available and provided over the IP Network 120, including telephony services provided to each of the premises 102. Akl Decl. ¶ 220.

**b) Kung Discloses Element 7D.**

Kung discloses that the “broadband residential gateway 300 may be configured as the interface unit between the remainder of the customer premise equipment 102 devices [i.e., the telephones] and the external network.” Kung, 16:50-53. Figure 4 shows that BRG 300 is connected to telephone 110 and interfaces with the IP Central station 200 through a hybrid fiber coaxial plant 112, the head-end hub 115, and the external IP networks 120n.



Kung, Fig. 4 (highlighting added) (showing the BRG connected between the telephone and the IP central station); *see also* Akl Decl. ¶ 222 (explaining that the system of Kung would have been used as an interface for Gainsboro’s institutional system to provide an interface to both legacy telephone equipment and newer IP equipment and to make upgrading the phone system more practical).

**9. Claim 8 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 8 depends from claim 7 and additionally recites “wherein said at least one network connection is a Voice over Internet Protocol (VOIP) connection.” Kung teaches “in one exemplary application of the voice over IP operations” that

the broadband residential gateway 300 digitizes the analog telephony signal using, for example, G.711 $\mu$  law coding (64 Kbps Pulse Code Modulation). The digital samples may then be packetized in, for example, the broadband residential gateway 300 into IP packets. The broadband residential gateway 300 may be configured to encapsulate the IP packets into, for example, DOCSIS (Data Over Cable Service Interface Specifications) frames *for transmission back to the head-end hub (HEH) 115 over the hybrid fiber-coaxial plant 112*. The hybrid fiber-coaxial plant 112 may then be configured *to transport signals for both upstream (to head-end hub 202) and downstream (to the broadband residential gateway 300 and customer premise equipment 102) directions*.

Kung, 24:32-45 (emphasis added). Persons of ordinary skill in the art would have



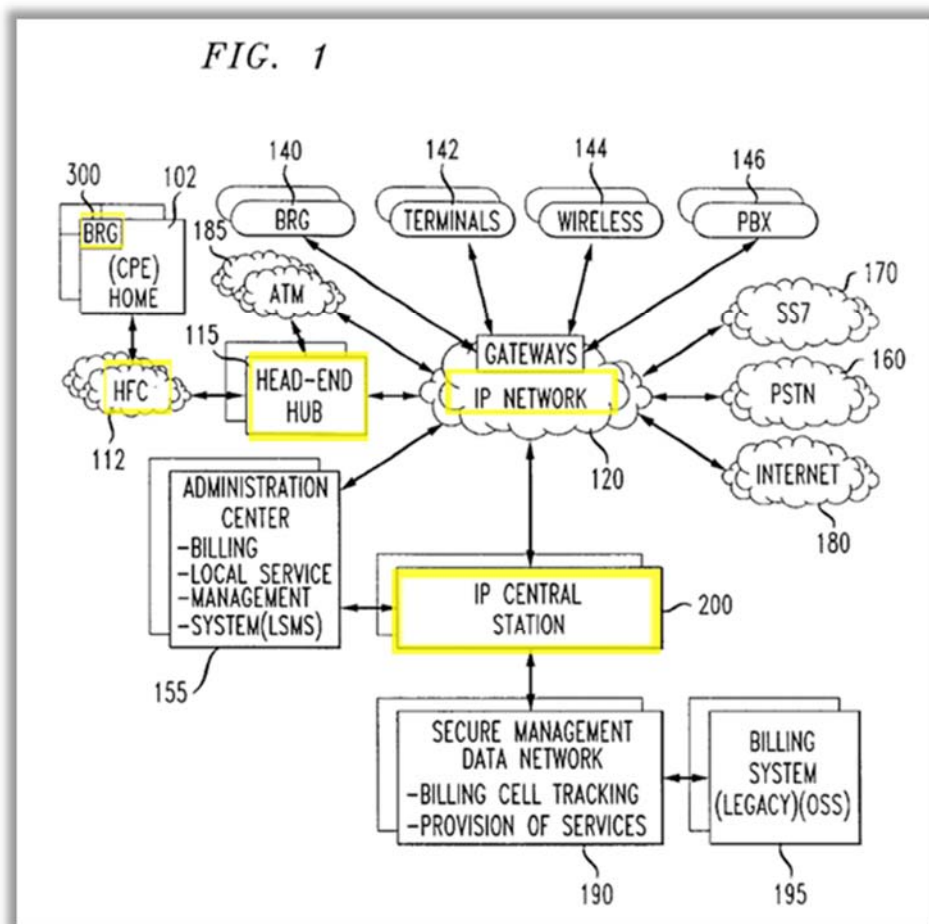
understood that analog signals from a telephone are processed and digitized by the BRG 300 and transmitted over the network connection to the IP central station 200 where the VoIP call is routed through the voice gateway to the PSTN. Akl Decl. ¶ 225. Moreover, one having skill in the art would have been motivated to add Kung's hybrid system to Gainsboro's system. *Id.*

**10. Claim 9 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 9 depends from claim 7 and additionally recites “wherein said gateway converts attempted telephonic communication between said local and said remote user for transmission over said network connection.” As indicated in Section VI(A)(9), “the broadband residential gateway 300 digitizes the analog telephony signal using, for example, G.711 $\mu$  law coding (64 Kbps Pulse Code Modulation). The digital samples may then be packetized in, for example, the broadband residential gateway 300 into IP packets.” Kung, 24:31-36; *see also id.*, 17:7-8 (explaining that “the broadband residential gateway 300 may ... provide[e] conversion between analog voice and IP voice packets”). Thus, the BRG 300 converts analog signals from the telephones into digitized samples that are “packetized” for transmission over a VoIP framework. Akl Decl. ¶ 227 (explaining further that the hybrid fiber-coaxial plant 112 is configured for both upstream and downstream communications between the local and remote user).

**11. Claim 10 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 10 depends from claim 7 and additionally recites “wherein said gateway sends said attempted telephonic communication to said central platform via said network connection.” As indicated in Section VI(A)(2)(8)(a), persons of ordinary skill would have understood that the connection coupled to the IP central station extending to the IP Network 120 is a network connection that ties together the various services available including telephony services provided to each of the institutional telephones. Akl Decl. ¶ 229.



Kung, Fig. 1 (highlighting added) (showing that attempted communications are sent to the IP central station via the “HFC”, “HEAD-END HUB”, and “IP NETWORK”); *see also id.*, Fig. 4.

“The hybrid fiber-coaxial plant 112 may be coupled to the head-end hub (HEH) 115.” Kung, 22:60-61. The HEH 115 is connected to high-speed routers of the high-speed packet networks 120n. *Id.*, 22:67-23:11. The IP central station 200 “provide[s] seamless integration and control of the high performance network 120 (e.g., an IP based communication system) interface with the public switched networks (PSTN) 160 ... so that ... voice calls ... [are] properly transferred between the broadband residential gateway 300 and the public switched telephone network 160 and Internet 180.” *Id.*, 23:66-24:8.

As shown in the exemplary call flow of an on-network call to an off-network call, when the BRG detects an off-hook condition, e.g., a call attempt, the broadband residential gateway or the call manager server 218 (shown as a server within the IP central station 200 in Figure 2) collects the dialed digits, which are then handled by the call manager 218. Kung, 26:13-26. “The call manager 218 may issue a first call processing message 513 to the broadband residential gateway 300 indicating that the number is valid and the call is proceeding (e.g., a valid on-hook condition).” *Id.*, 26:40-47. Persons of ordinary skill would have understood that the attempted telephonic communication is sent to the central platform, namely the IP central

station 200 where the call manager server 218 processes the call and determines whether it is a valid call. Akl Decl. ¶ 232.

**12. Claim 11 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 11 depends from claim 7 and additionally recites “wherein said gateway includes routing means.” ’021 patent, 20:4-5. Kung discloses that the BRG 300 has “smart buffer logic (SAL) ... coupled to the telephony port(s) 332,” which “includes] selectable switching and *routing algorithms* based on services and applications associated with each port.” Kung 21:26-27, 32-34 (emphasis added). The BRG 300 functions to route telephonic communications from a telephone located at a premises to the IP central station 200, in accordance with the claimed “routing means.” Akl Decl. ¶ 234 (also citing ¶ 167-172 and indicating that BRG of Kung would further teach the claimed routing means under GTL’s construction proposed in litigation). For example, the BRG 300, as a gateway located on-site having routing functions, is “configured as the interface unit between the remainder of the customer premise equipment 102 devices [e.g. telephones] and the external network.” Furthermore, the BRG 300 “may serve the same functions and operate as a private branch exchange (PBX).” Kung, 22:18-20. Persons of ordinary skill would have understood the BRG 300 to operate as a routing means in controlling and managing telephonic communications to the IP central station 200 on the broadband network. Akl Decl. ¶ 234.

**13. Claim 12 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 12 depends from claim 7 and additionally recites “wherein said gateway enables mixed environment operation.” ’021 patent, 20:6-7. Kung discloses that

the broadband residential gateway 300 may a) providing conversion between analog voice and IP voice packets, b) multiplexing/DE multiplexing streams of IP voice packets, c) supporting multiplexing/DE multiplexing of multiple incoming and outgoing signals including multiple *voice, multimedia, data, system administration, and/or TV information signals*.

Kung, 17:7-14 (emphasis added). Persons of ordinary skill would have understood the BRG to be enabled to operate in a mixed environment, i.e., exchanging signals with external networks having disparate protocols. Akl Decl. ¶ 237 (citing Kung, 23:60-24:14).

**14. Claim 13 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 13 depends from claim 7 and additionally recites “wherein said local user is only granted access to place a telephone call if an authentication means verifies identification information as indicative of a valid user.” ’021 patent, 13:8-11. Gainsboro discloses utilizing a PIN and “biometric voice verification features” that are scanned, converted, and stored in a database as authentication means. *See* Section VI(A)(4) (describing how these features disclose the claimed authentication

means of claim 3). During caller validation, the inmate enters his PIN number and the “number to be called.” Gainsboro, 9:1-4. To resolve the concern that PINs can be compromised, “biometric voice verification would obviate[s] this problem [of PIN abuse], as the voice would be used to validate entry into any inmate account.” *Id.*, 5:33-39. The biometric features of Gainsboro would have been understood to verify identification information as indicative of a valid user only if the voice sample matched the voice print. Akl Decl. ¶ 239; *see also id.* ¶ 188 (explaining that Gainsboro’s caller identification, using voice samples functions would have been performed within the authentication server of Kung). Furthermore, the call manager discloses the “authentication means” by verifying the identity of a party (using either a PIN or a party’s voice). Akl Decl. ¶ 196.

**15. Claim 14 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 14 depends from claim 7 and additionally recites, “wherein said central platform digitally records said telephonic communication between said local and said remote user.” ’021 patent, 20:12-14. As explained in Section VI(A)(2)(j), Gainsboro discloses that “[t]he TMU can be programmed *to enable associated recording equipment to record telephone calls.*” Gainsboro, 4:34-36 (emphasis added). “CCU directs TMU to connect, *record*, passively monitor and terminate calls.” *Id.*, 6:39-40 (emphasis added). Gainsboro also discloses that the TMU can *digitally record* audio such as a “sample of the caller’s voice.” The CCU then

compares the digitized sample with a stored voice print to verify the identity of the caller. It would have been obvious to add Gainsboro's TMU recorder since it is in the signal path of the phone call and can selectively pick which line to record. Akl Decl. ¶¶ 177-78.

Additionally, the CODEC circuit, which is a circuit that converts voice signals between analog and digital, supports "voice monitoring and/or verification functions." Gainsboro, 8:27-29; *see also* Akl Decl. ¶ 241. It would have been understood that in converting voice signals from analog to digital to support voice monitoring, Gainsboro teaches digitally recording a telephonic communication between users. Akl Decl. ¶ 241.

**16. Claim 15 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 15 depends from claim 7 and additionally recites, "wherein said system further comprises: at least one workstation for monitoring, controlling, storing and billing related to said telephonic communication." '021 patent, 20:15-19. As discussed in Section VI(A)(7), with respect to claim 6. Claim 15 is obvious for the same reasons as claim 6. The administrative workstations of Gainsboro, therefore, support monitoring ("real-time monitoring of inmate telephone calls"), controlling ("setting ... restrictions on telephone access"), storing ("storing and reporting of detailed inmate call details and account information" and "storing and reporting of detailed inmate call details and account information"), and billing ("checking of

inmate debit (i.e. paid-in-advance) accounts”) functions. Akl Decl. ¶¶ 243-44.

**17. Claim 16 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 16 is an independent method claim and recites the following elements that have slight differences between claims 1-6:

[16C] *monitoring said attempted access to said system;*

[16D] *controlling said access of said local user to said system;*

[16G] *billing for usage of said system,*

’021 patent, 20:20-50 (emphasis showing the minor differences between claim 16 and claims 1-6).

Independent claims 1 and 16 disclose similar systems with the addition of system elements and functions that were common to telephone systems operating in a prison environment at the time of the invention. Akl Decl. ¶¶ 245-46 (explaining that Element 1A, claim 3, claim 4, and Elements 1J, 1F, 1I, 1J, 1K, 1G, 1L teach the same or obvious variants of Elements 16A-16B, 16E-16F, and 16H-M, respectively, and relying on the same citations to Kung and Gainsboro); *see also id.* ¶¶ 247-48, 254-56, 259-269. As discussed below, the combination of Gainsboro and Kung disclose the additional system elements of claim 16, a method claim, and are, in any event, an obvious variation of the system of claim 1 in view of Gainsboro and Kung. *Id.* ¶¶ 245-46.



a) **Gainsboro Discloses “monitoring said attempted access to said system.”**

Gainsboro discloses “passive” monitoring that can be performed by the disclosed system:

The third level is “*passive*” *line monitoring*, where the TMU detects, for example, DTMF tones, off-hook conditions, voltage spikes and/or sudden line impedance changes....

....

[The telephone system of the present invention can be programmed to default in any manner. For example, *the system can be set to place only those telephone calls that are among a preapproved list of telephone numbers*. Conversely, the system can be set *to place all telephone calls except those that are among a list of restricted telephone numbers*.

Gainsboro, 4:36-41, 5:1-7 (emphasis added).

Gainsboro further discloses a method for “connecting an inmate call” where the TMU “continuously monitors the inmate telephones 1.” *Id.*, 8:66-9:1; *see also id.*, 9:1-27 (explaining the initial screening tests that are applied based on the inmate telephonic inputs received by the TMU). Persons of ordinary skill would have understood that the TMU monitors the inmate telephones when the inmate attempts to access the system of Gainsboro to place a call. Akl Decl. ¶ 250; *see also id.* ¶ 165 (explaining how combining Gainsboro with Kung would have still maintained monitoring conversations taught in Gainsboro).

**b) Gainsboro Discloses “controlling said access of said local user to said system.”**

Gainsboro discloses that to “place a call,” the inmate must pass initial screening tests based on a PIN and the number to be called. Gainsboro, 9:1-5. The TMU “forwards both numbers to CCU” to query the user’s account and checks whether:

(1) there are sufficient funds in the inmate’s debit account to make the call (unless the call is a collect call);

(2) the particular inmate is allowed to: (a) use the particular telephone extension; (b) place calls at the given time-of-day; or (c) has exceeded a maximum number of calls or calling minutes within a given period of time; and

(3) based upon the number to be called, whether the number is approved or prohibited, whether the number to be called corresponds to the inmate’s attorney (in which case, the conversation will not be recorded or “live” monitored), and whether there are any time-of day or call frequency or other restrictions on the number to be called.

Gainsboro, 9:5-20; *see also id.*, 5:19-39 (describing biometric voice verification features utilized to verify that the person placing the call matches the user associated with the PIN). Persons of ordinary skill in the art would have understood that in identifying the user and checking the inmate’s account to determine whether sufficient funds are in the user account or whether there are any calling restrictions, the system controls the user’s access to the system. Akl Decl. ¶ 253 (explaining that

the TMU further utilizes the user's PIN to access other features of the account to the amount of funds in the account); *see also id.* ¶¶ 174-75 (explaining how combining Gainsboro with Kung would have still maintained control over telephonic communications taught in Gainsboro).

**c) Gainsboro Discloses “billing for usage of said system.”**

As part of its call qualification process the system of the Gainsboro checks whether “there are sufficient funds in the inmate’s debit account to make the call.” Gainsboro, 9:7-8. During a call, when “inmate funds become nearly exhausted, a warning tone [informs] the inmate of that condition.” *Id.*, 6:25-28. Figure 3, which shows an example (form 30) of information in an inmate’s account “an inmate’s debit account, calling privileges, and calling activity.” *Id.*, 7:41-43.

**FIG. 3**

30

31 {	DATE 11-JAN-92	INMATE INFORMATION				FORM CODE S IMM. INFO. 2			
32 {	REGISTER # 1111101	LEE				PHONE ACCESS 183771450			
	NAME (L, F, M) CHEN	MAILBOX 123445	STATUS A		CODE				
	LIVING UNIT NA					CHARGE D			
	COMMENTS					SORT 1234			
	SCHEDULE U	ALERT N	DENY CALLS N	ENABLE 02-DEC-91	ENTRY DATE 02-DEC-91	BALANCE \$ .03			
	DELETE N								
	LANGUAGE EN								
33 {	TRANSACTIONS				PHONE NUMBERS				
	DATE	TYPE	AMOUNT	UPDATED	PHONE NUMBER	TYP	ALRT	ATTY	CHRG
	19-DEC-91	MANU	-\$238.02	02-DEC-91	877-6787	A	N	N	D
	19-DEC-91	MANU	\$119.02	02-DEC-91	011444738081	A	N	N	D
	19-DEC-91	MANU	\$12.00	02-DEC-91	5754541	A	N	N	D
	19-DEC-91	MANU	\$14.00	02-DEC-91	3018348926	A	N	N	D
	CALLS				7035907655	A	N	N	D
	02-DEC-91	CALL	-\$1.44						
	02-DEC-91	CALL	-\$3.21						
	02-DEC-91	CALL	-\$3.32						
34 {	F1=HELP F3=MENU F5=COMMIT				F8=CANCEL		TERMINAL PTS.000		
35 {	ENTER THE REGISTER NUMBER OF THE INMATE								
	COUNT: 1				(LIST)(REPLACE)				

*Id.*, Fig. 3 (highlighting added) (showing calls billed to inmate account). In Figure 3, “data blocks 22 ... show the inmate’s transactions (both accounting transactions *and phone calls*).” Gainsboro, 7:50-52 (emphasis added). Persons of ordinary skill would have understood that in applying dollar amounts against the inmate’s account balance, the system of Gainsboro is billing for usage of the system. Akl Decl. ¶ 258; *see also id.*, ¶ 191 (discussing how combining Kung with Gainsboro maintains billing for usage of said system as a function of the claimed invention).

**18. Claim 17 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 17 depends from claim 16 and additionally recites, “wherein said identifying said local user includes verifying identification information as indicative of said local user.” ’021 patent, 20:51-53. As explained regarding claim 3, Gainsboro discloses “biometric voice verification features.” *See* Section VI(A)(2)(k). During caller validation, the inmate enters his PIN number and the “number to be called.” Gainsboro, 9:1-4. “[T]he voice [of the inmate] would be used to validate entry into any inmate account.” *Id.*, 5:33-39. The biometric features of Gainsboro would have been understood to verify identification information as *indicative of a valid user* only if the voice sample matched the voice print. Akl Decl. ¶ 271.

**19. Claim 18 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 18 depends from claim 16 and additionally recites, “wherein said

controlling said access only allows said telephonic communication after verifying contact between said local and said remote user is permitted.” ’021 patent, 20:54-57. As explained regarding claim 4 (addressed in Section VI(A)(2)(h)), Gainsboro discloses that each requested call must pass “initial screening tests.” These initial screening tests include the CCU checking “based upon the number to be called, whether the number is approved or prohibited.” Persons of ordinary skill would have understood that telephonic communication between the inmate and the party associated with the outside telephone number is allowed only if the CCU verifies that the number is not prohibited and approves contact between the local and remote user of the system. Akl Decl. ¶ 273.

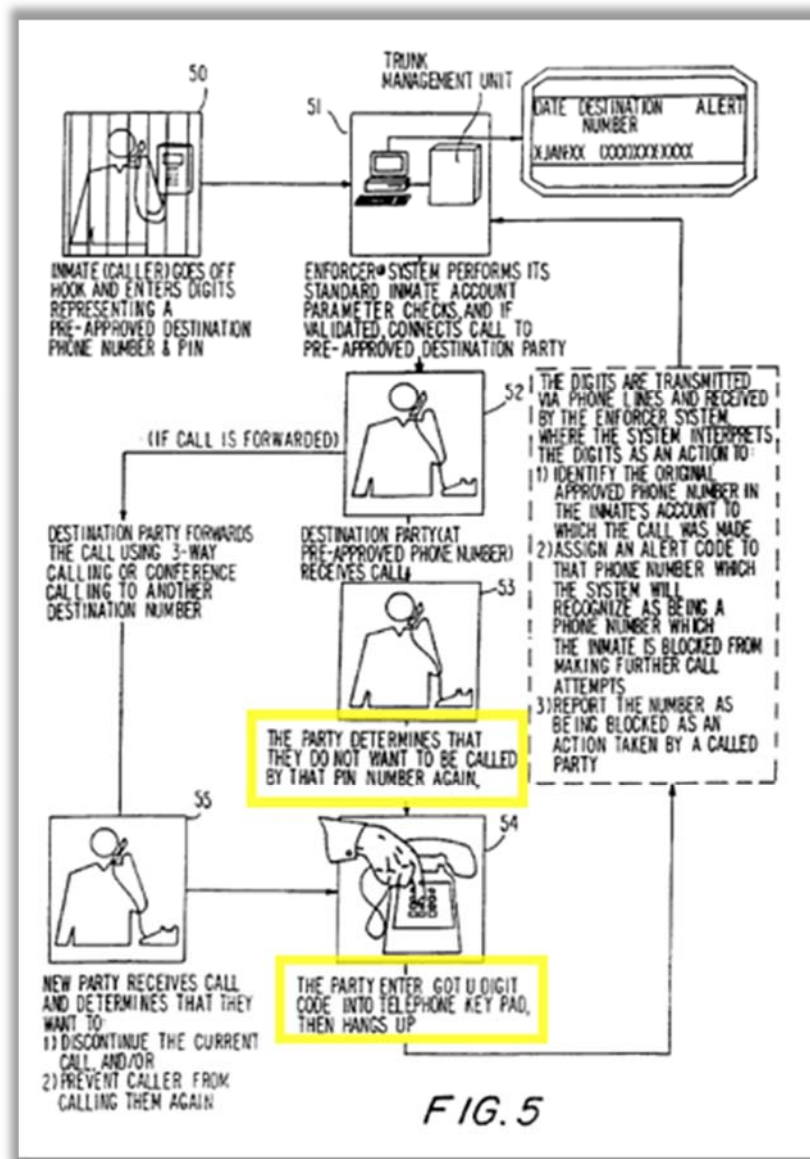
**20. Claim 19 Is Obvious Over the Combination of Gainsboro and Kung.**

Claim 19 depends from claim 16 and additionally recites, “wherein said method further includes the step of allowing said remote user to deny said local user the ability to contact said remote user under control of said central platform.” ’021 patent, 20:58-61. Gainsboro includes a feature that allows a remote user to deny the inmate the ability to contact the remote user:

the destination party is allowed a specified time to determine whether to accept the call, hang up or press GOTU to invoke the invention’s prospective call screening feature... If, in step 53, *the destination party presses GOTU* (depicted as step 54), CCU stores a record in the inmate’s account that *prohibits the inmate from calling the destination*

*party in the future* and optionally alerts prison officials of any future attempts to place such calls.

Gainsboro, 9:59-65 (emphasis added). Figure 5 below shows the method implementing this step.



Gainsboro, Fig. 5 (highlighting added) (showing steps of method that allows the destination party the option to not be “called by that PIN number again); *see also*

Akl Decl. ¶¶ 276-77.

**B. GROUNDS 2 and 3: Claims 20-22 Are Obvious Over the Combination of Gainsboro, Cree, and Joseph and Claim 23 Is Obvious In Further View of Kung.**

**1. Motivation to Combine Gainsboro, Cree, Joseph and Kung and Rationales for Obviousness under Grounds 2 and 3.**

Cree and Joseph would have further added predictable improvements to Gainsboro. It would have been understood that converting, routing, and transmission of a voice signal to a digital format could have been accomplished using a PC-based platform (either on or off-site)—utilizing the PC as a “soft switch” or a dedicated controlling device, such as routers disclosed in Joseph, which convert analog calls into digital packets and “modify received data packets to include certain routing ... information.” Akl Decl. ¶ 330 (quoting Joseph, ¶ 38); *see also id.* ¶ 65 (citing Anders at 1:64-2:2 indicating that placing call restrictions could be performed by computers located on or off-site). Routing controllers, along with a gateway such as that taught in Joseph, would have improved the system taught by Gainsboro by allowing the router to “selectively connect inmate phones with outside lines.” *Id.* ¶ 334 (citing Gainsboro, 7:62-67 and Joseph, ¶ 20). It would have further been obvious to utilize a workstation for users to interface with the system and a server to support system functions. *Id.* ¶¶ 304, 308. Kung would further have provided the motivation to locate a router on-site internal to the central platform. *Id.* ¶¶ 311-13; *see also id.*, ¶¶ 335-36 (explaining that Kung’s BRG would, therefore, support the same functions

as Gainsboro's on-site central platform and could be configured with only ordinary skill and reasonable experimentation to not only provide routing functions but other improvements that IP telephony brought, citing Kung, 19:54-60).

PC-based devices would have been adapted for use in a high-density network (i.e., a large number of users) by using well-known and commonly available off-the-shelf components such as the telephone interface 206 and line control card 204 of Cree. Akl Decl. ¶¶ 112, 291, 331-33 (also citing the Intel HDSI and discussing that Joseph routing controllers/gateways were configured as scalable systems to handle high volume IP environments). Persons of ordinary skill would have understood that interface cards were "conventional components of a personal computer or workstation" that could be used to address the issue of network traffic and routing of calls from a plurality of on-site phones. *Id.* ¶ 332 (quoting Cree, 5:7-9).

**2. Claim 20 Is Obvious Over the Combination of Gainsboro, Cree, and Joseph.**

Claim 20 is an independent claim and recites the following with annotations to designate elements 20A-20I:

[20A] A site-based inmate telecommunication call processing system comprising:

[20B] a plurality of telephone terminals connected to an on-site central platform,

[20C] said on-site central platform including a high density station interface card access and an Internet protocol link card egress;



and

[20D] a router routing signals from said on-site central platform to a network using Voice over Internet Protocol, said network further connected to a Voice over Internet Protocol infrastructure;

[20E] wherein said central platform includes one or more apparatuses for processing a telephone call made from a telephone terminal of said plurality of telephone terminals,

[20F] wherein said central platform is coupled to an administrative workstation for monitoring conversations in said telephone call made from said telephone terminal without detection; and

[20G] wherein said one or more apparatuses records said conversations in said telephone call between a user associated with said at least one telephone terminal and an external party, and

[20H] further wherein said one or more apparatuses digitizes audio regarding said conversation and stores said audio for caller identification at said institution, and

[20I] further wherein said one or more apparatuses communicates with an administrative workstation for billing for said telephone call made from said telephone terminal.

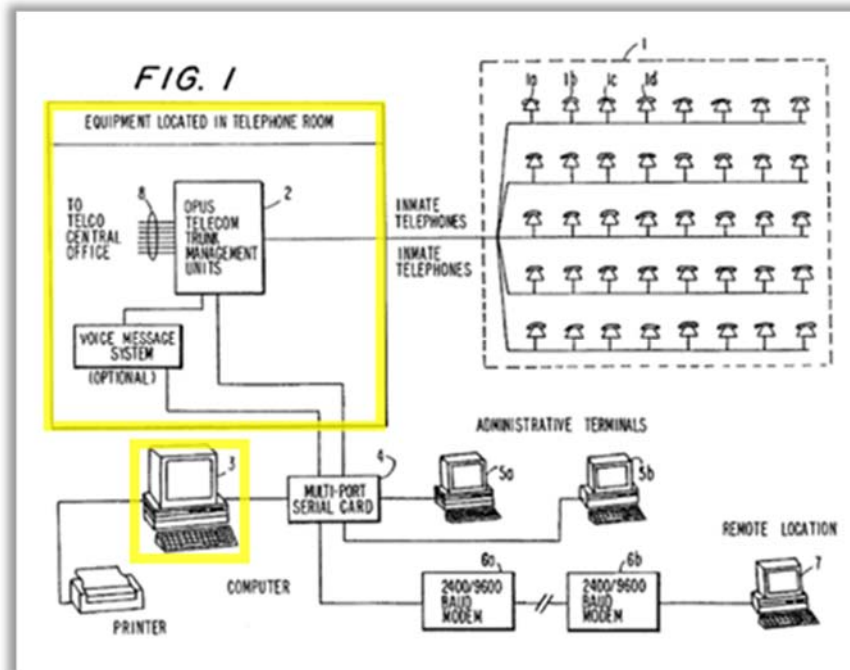
'021 patent, 20:62-22:6.

Independent claims 1 and 20 disclose similar systems with the addition of system elements that were common to telephone systems operating in a prison environment at the time of the invention. Akl Decl. ¶ 280 (explaining that Elements 20E-20I are the same or obvious variants of Elements 1F, 1G, 1J, 1K, and 1L, respectively); *see also id.* ¶¶ 148-49 (discussing that the CCU coupled to the TMU

of Gainsboro discloses the “central platform”); *id.* ¶ 284 (discussing that the call management system of Gainsboro is a site-based call processing system teaching Element 20A). As discussed below, the combination of Gainsboro, Joseph, and Cree disclose the additional system elements of claim 20 (Elements 20B-20D), and are in any event, an obvious variation of the system of claim 1 in view of Gainsboro’s cited teachings. *Id.* ¶¶ 281-82.

**a) Gainsboro Discloses “a plurality of telephone terminals connected to an on-site central platform.”**

As explained in Section VI(A)(2)(d), it would have been understood that the TMU connected to the CCU and alternatively vice-versa provides a “central platform” through which users, such as inmates at the inmate telephones, can access outside telephone lines and other services provided by the call management system. Akl Decl. ¶¶ 286-87; *see also id.* ¶¶ 148-49 (discussing that the CCU coupled to the TMU of Gainsboro discloses the “central platform”).

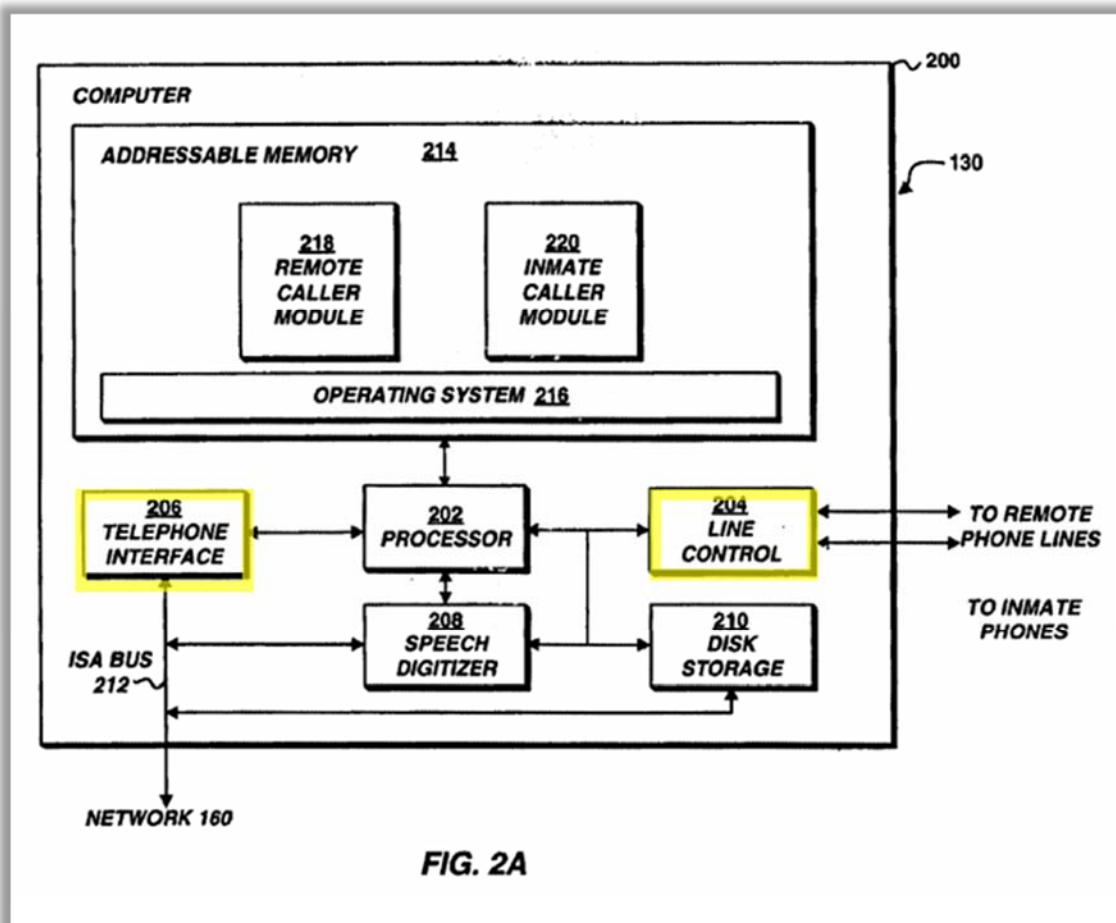


Gainsboro, Fig. 1 (highlighting added) (showing an on-site central platform). As shown in Figure 1, the central platform of Gainsboro is located on-site, with the terminal 7 located in a “remote location.” Akl Decl. ¶ 288.

**b) Gainsboro In View of Cree and Joseph Discloses “said on-site central platform including a high density station interface card access and an Internet protocol link card egress.”**

Gainsboro teaches that the CCU is coupled to the TMU to control the connection of the inmate phones to the outside telephone lines. Gainsboro, 4:15-17. The “multichannel” TMU 2 “includes circuitry to selectively connect inmate phones with outside lines.” *Id.*, 7:62-67. The CCU 3 is a “‘486’ personal computer or larger ‘super mini’ type computer configured to operate under a suitable operating system, such as UNIX™ System V.” *Id.*, 7:3-6.

Cree discloses an inmate messaging system that operates in a telecommunication system to “provide voice connectivity between a remote caller and an inmate in a controlled prison environment.” Cree, 4:31-33. The inmate messaging system 130 “includes a conventional computer 200 coupled to telephone interface card 206” and includes “line control cards 204 for providing switching and access control for remote telephone lines and for cell block telephones connected to system 130.” *Id.*, 4:45-46, 52-55.



*Id.*, Fig. 2A (highlighting added).

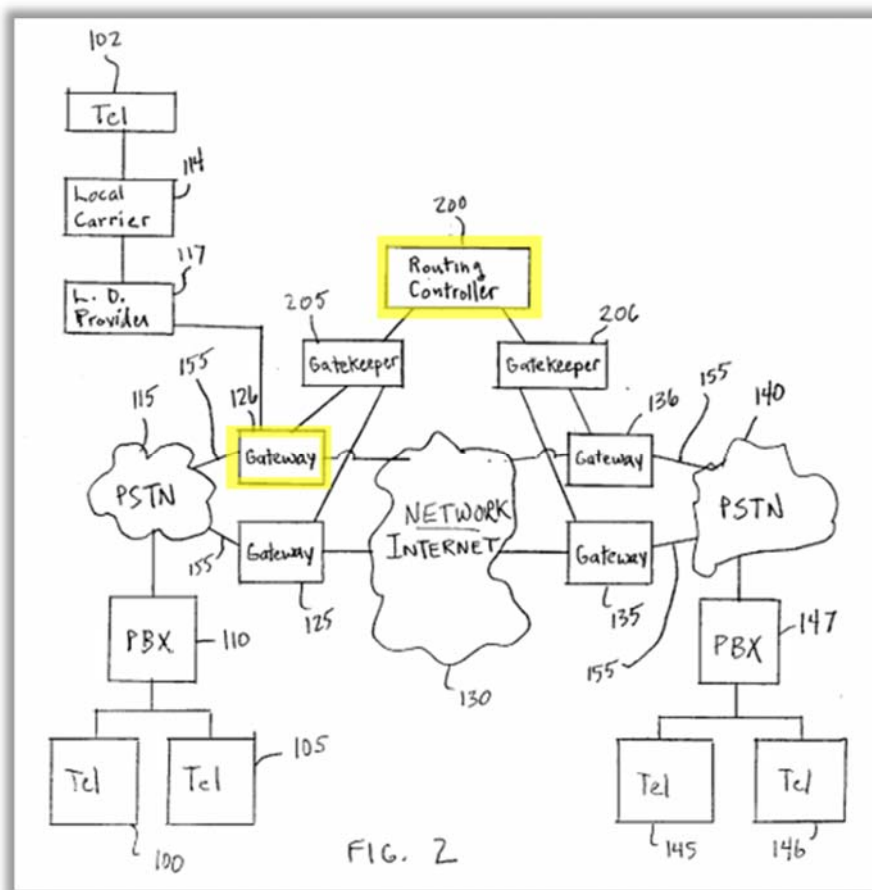
Persons of ordinary skill would have understood that central platform of Gainsboro would have been configured with a line control card and telephone interface card (or an integrated combination of both), such as a “high-density station interface board,” to provide large scale switching and voice processing in a telephone network. *See* Akl Decl. ¶¶ 291-92.

Joseph teaches IP connectivity utilizing a routing controller 200 is logically coupled to gateways 125/126. Joseph, ¶ 45. The gateways provide a translation of data between the PSTN’s 115/135 and the H.323-based VoIP network 130. *Id.*, ¶ 41. It would have been obvious that the gateway 125/126 of Joseph would have utilized hardware, such as a PCI card, to provide IP link egress (and ingress) to support conversion, receipt, and transmission of IP voice packets in a VOIP infrastructure. Akl Decl. ¶ 293. Such IP link egress would have been advantageously utilized in the system of Gainsboro to efficiently integrate a prison telephone system into a multimedia environment that supports voice and data. *Id.* ¶ 294.

**c) Gainsboro In View of Joseph Discloses “a router routing signals from said on-site central platform to a network using Voice over Internet Protocol, said network further connected to a Voice over Internet Protocol infrastructure.”**

Gainsboro discloses an on-site platform (the TMU and CCU), and it would have been obvious to utilize Joseph to provide IP telephony in a high-density environment. Akl Decl. ¶¶ 292-94. Joseph discloses control architecture for VOIP

communications. Joseph, ¶ 20.



*Id.*, Fig. 2 (highlighting added).

The control architecture includes “a control signal interface to at least one gateway for routing VoIP/FoIP communications.” *Id.*, ¶ 20. In the embodiment shown in Figure 2, the control means is the routing controller 200, which “receives a VoIP/FoIP routing request [and] determine[s] a best route through the IP network.” *Id.* The routing controller 200 would have been understood to be a router utilizing the routing request information from the gateway 126 to send voice data through an IP network in a VoIP format. Akl Decl. ¶ 297. It would have been obvious to utilize

the routing controller 200 (along with a conversion device such as the gateway) in the system of Gainsboro to provide routing “to selectively connect inmate phones with outside lines.” *Id.* ¶¶ 298-299 (quoting Gainsboro, 7:62-67).

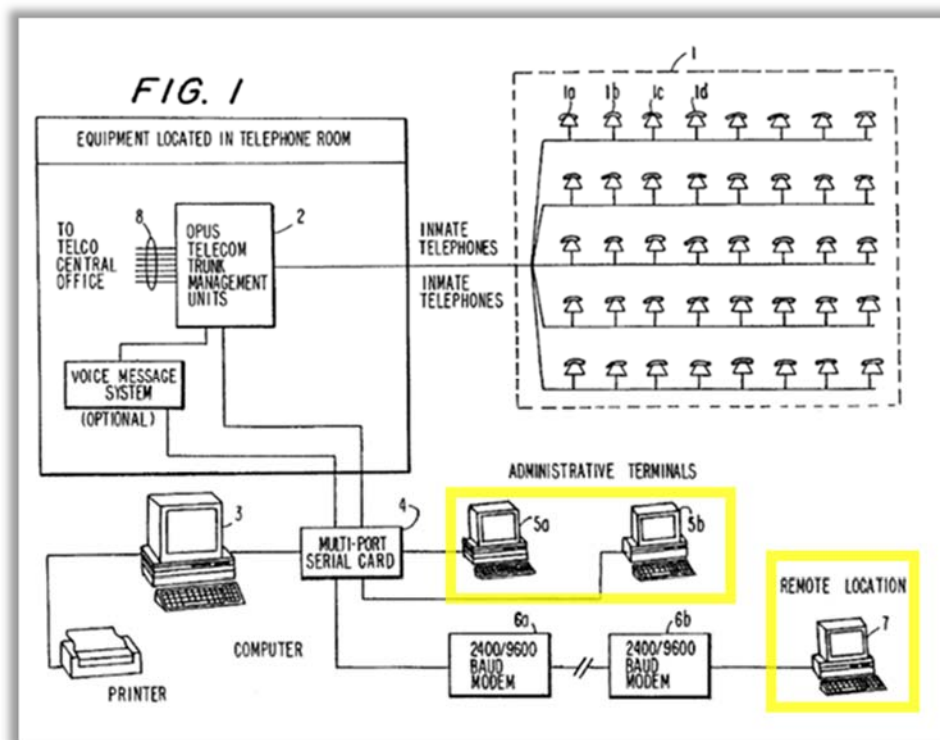
**3. Claim 21 Is Obvious Over the Combination of Gainsboro, Cree, and Joseph.**

Claim 21 depends from claim 20 and additionally recites, “a server connected to said on-site central platform.” ’021 patent, 22:8-9. Gainsboro discloses a CCU 3 operating a “database management system (DBMS), such as ORACLE™, which includes a structured query language (SQL) interface ... to provide[] access to the stored configuration and status information [and] easily navigate the database system.” Gainsboro, 7:9-16. The database management system would have been understood to operate as a server connected to the central platform, namely the CCU coupled to the TMU of Gainsboro. Akl Decl. ¶ 303. Server functions would have included “storing and reporting of detailed inmate call details and account information [and] storing and reporting of telephone usage data.” *Id.* ¶¶ 303-04. (quoting in part Gainsboro, 7:25-40 and explaining that servers were known to manage data structures and could be integrated to connect internally to a central control processor or module, or, as in Cree, could reside separately and be remotely connected to the control processor). It would have been obvious for one of ordinary skill in the art to connect a server to the on-site central platform because of the advantages such a server would provide to the call processing system, including, but

not limited to, the ability to store and log all calls, and the server's ability to act as a database for the entire system. Akl Decl. ¶ 304.

**4. Claim 22 Is Obvious Over the Combination of Gainsboro, Cree, and Joseph.**

Claim 22 depends from claim 21 and additionally recites, “at least one workstation connected to said server.” At the time of the invention, workstations were well-known interfaces used by administrators to access server functions, provide maintenance, and make customizations to said functions. Akl Decl. ¶ 306. Gainsboro, in Figure 1, teaches workstations, shown as administrative terminals 5a-b and 7 connected to CCU 3 via the multi-port serial card.



Gainsboro, Fig. 1 (highlighting added). It would have been obvious to one of



ordinary skill in the art to connect a workstation to a server in the system in order to advance the administrative and/or investigative goals of the system by allowing the workstation to access the full log of all calls and full system database provided by the server. Akl Decl. ¶ 308.

**5. Under Ground 3, Claim 23 Is Obvious Over the Combination of Gainsboro, Cree, Joseph, and Kung.**

Claim 23 depends from claim 20 and additionally recites, “the router is internal to said on-site central platform.” As discussed *supra* in Section VI(B)(2)(c), the routing controller 200 would have been understood to be a router utilizing the routing request information from the gateway to send voice data through an IP network in a VoIP format. Akl Decl. ¶ 297. It would have been obvious to utilize the routing controller 200 (along with a conversion device such as a gateway) in the system of Gainsboro to provide routing of voice signals. *Id.* ¶ 298. In view of Kung’s placement of gateways on the customer premises (Kung, 3:4-48), it would have further been obvious to locate the routing controller of Cree (along with a conversion device such as a gateway) in the system of Gainsboro to operate “on-site” and internal to the central platform in order to gain the benefit of “ease of maintenance, control, and re-configuration as well as a reduction in cost due to shared functionality.” Akl Decl. ¶¶ 311-13 (citing and quoting in part Kung, 4:15-25).

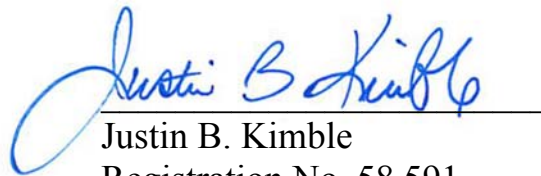
**VII. CONCLUSION**

Gainsboro, Kung, Cree, and Joseph are prior art to the ’021 patent under

§ 102(a) and/or (b). As shown by this Petition, the combination of these references discloses each and every limitation of claims 1-23 of the '021 patent and the reasoning why one having ordinary skill in the art would have found them obvious to combine. Thus, claims 1-23 of the '021 patent are rendered obvious by the stated combinations of Grounds 1-3 and therefore are unpatentable.

Dated: January 27, 2017

Respectfully submitted,



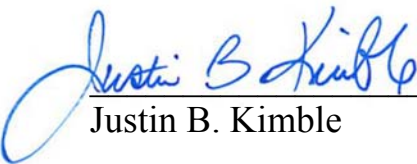
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## **CERTIFICATE OF SERVICE ON PATENT OWNER**

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on January 27, 2017 a complete and entire copy of this Petition for CBM Review Under 37 C.F.R. §42.205 and supporting evidence, via Federal Express, to the Patent Owner by serving the correspondence address of record for U.S. Patent No. 7,783,021, as well as litigation counsel for the co-pending lawsuit captioned in the foregoing Petition (litigation counsel also served by e-mail):

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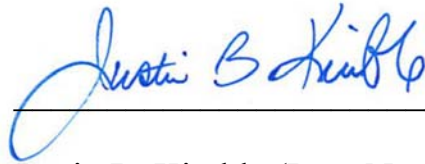
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## **CERTIFICATE OF COMPLIANCE**

As required by 37 C.F.R. § 42.24(a), the undersigned hereby certifies that the foregoing Petition for Covered Business Method Review contains 17,863 words, excluding those portions identified in 37 C.F.R. § 42.24(a)(1), as measured by the word-processing system used to prepare this paper. Thus, this paper complies with the 18,700 word limit as set forth in 37 C.F.R. § 42.24.



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