BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking Proceeding to Consider Changes to Licensing Status and Obligations of Interconnected Voice over Internet Protocol Carriers	Rulemaking 22-08-008

ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON TECHNOLOGICAL METHODS OF PROVIDING VOICE SERVICE

CLOUD COMMUNICATIONS ALLIANCE

MEMBER RESPONSES TO QUESTIONS IN ATTACHMENT A

As required by the February 16, 2023, ruling,[1] the Cloud Communications Alliance (CCA) provides responses to the ALJ's questions from four (4) members. Each member response is set forth in a separate Exhibit, attached hereto.

Of the CCA members volunteering responses, only one (1) member, ECG, Inc. (ECG), agreed to provide its responses with attribution. ECG is an engineering firm that maintains and builds voice, collaboration, and data networks for Service Providers and Large Enterprises around the world. Service providers, government agencies, universities, and large enterprises trust ECG to build and support important voice networks. ECG designs and deploys next-generation telephony platforms for domestic and international carriers. ECG is primarily but not exclusively an engineering firm.[2]

For various legitimate reasons, including competitive risks and commercial sensitivities, the other CCA members providing responses– all of whom are VoIP service providers- agreed to assist the CCA, but only if their anonymity was protected. Each of the CCA members that has graciously volunteered their time

[1] The ALJ's ruling directed parties to this proceeding to file more comprehensive answers to questions than were discussed at an earlier pre-hearing conference in which CCA participated as a party to the rulemaking proceeding. Footnote 1 of the ruling listed fifteen (15) parties, but CCA was omitted. On the good faith belief the omission was inadvertent, and in light of CCA's earlier participation in the pre-hearing conference, CCA hereby submits its response to the ruling, including the responses of four (4) of its members.

[2] Although primarily an engineering firm, ECG also provides VoIP service to a small number of customers in Georgia, currently less than 200 endpoints.

and resources to provide responses to the ALJ's questions seek to support, inform, and assist the ALJ and California Public Utilities Commission in their efforts to develop rules necessary to effectively oversee the VoIP industry. To facilitate candid and thorough responses from its members, and to fulfill its duty to respond to the ALJ's ruling, CCA agreed to submit its three VoIP service provider member responses anonymously. CCA hereby attests that each of the responses submitted anonymously by its VoIP service provider members is a true and accurate reflection of each member's response to the CCA's solicitation of responses and are submitted without alteration, other than clean-up and formatting.

/S/

Jonathan S. Marashlian
Counsel
1430 Spring Hill Rd., Suite 310
McLean, VA 22102
For: Cloud Communications Alliance

3/9/2023

Date

EXHIBIT A

ECG, Inc.

Engineering firm that maintains and builds voice, collaboration, and data networks for Service Providers and Large Enterprises

CLOUD COMMUNICATIONS ALLIANCE (CCA)

MEMBER RESPONSES TO QUESTIONS IN ATTACHMENT A

OF ALJ'S FEBRUARY 16, 2023 RULING

Contact: Mark R Lindsey, mrl@ecg.co

1. What is the technological difference between fixed and nomadic interconnected VoIP service? Provide definitions for these services and examples of providing these services to customers, including brochures, links to company service/products websites, etc.

ANSWER: This respondent is ECG, Inc., a Network Engineering firm doing work designing, implementing, and troubleshooting product implementation at Voice Service Providers and Internet Service Providers in the US.

Nomadic or Non-fixed Interconnected VoIP services are the most common design and are intended to be decoupled from physical location or specific devices. They are principally software applications communicating via the Internet, similar in nearly all technology to accessing a web email service (like Gmail). The software communicating with the Service Provider can operate on mobile devices, or dedicated devices like desk phones. The data flows to and from the user like any other Internet application. (In ECG's voice services, we only offer this kind of nomadic.)

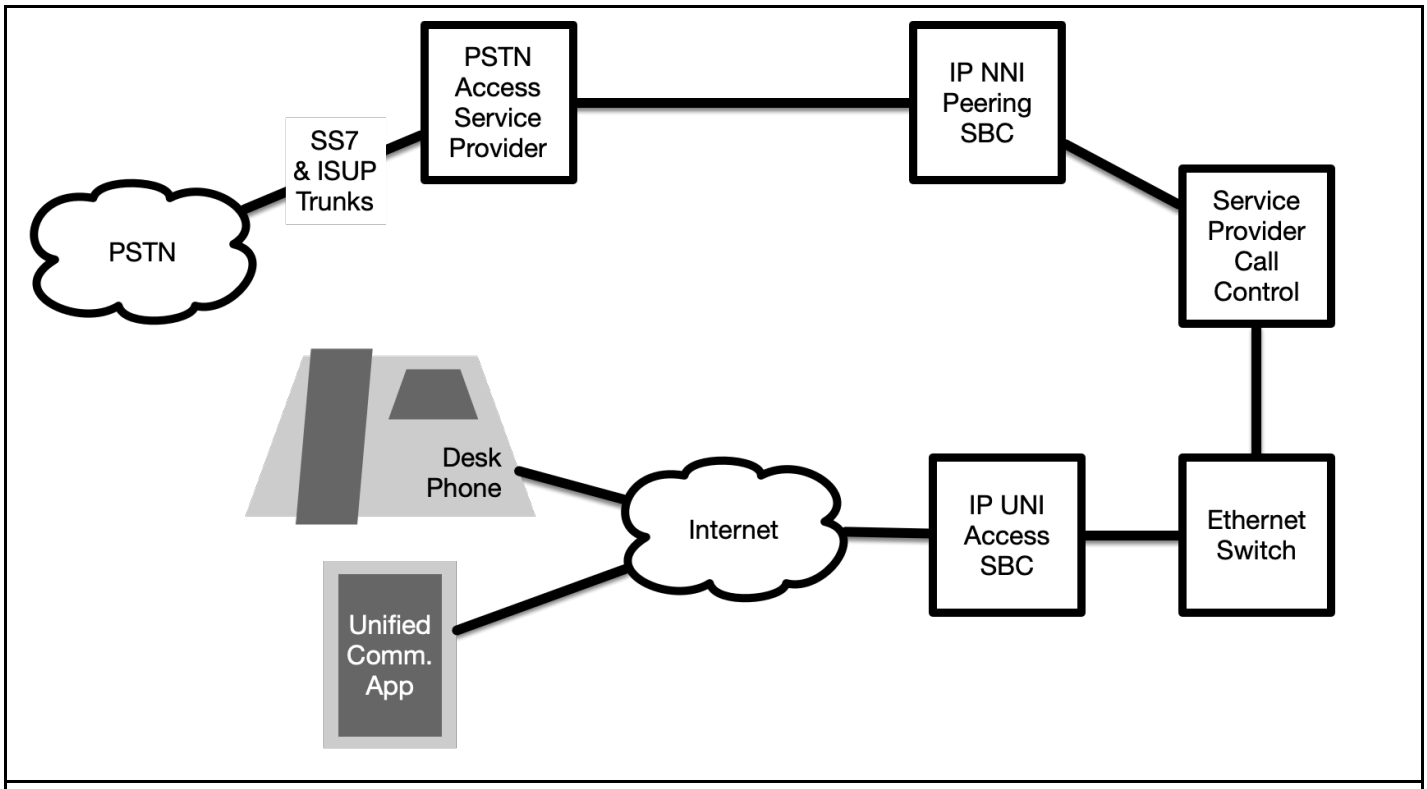

Figure 1. Standard Interconnected VoIP service can be used anywhere the Internet is accessible by moving the Desk phone or the moving the smartphone running the Unified Communications App.

Fixed Interconnected VoIP services take the same technology but are intrinsically associated with a specific geographic location through the installation of data links or specific equipment providing the service. These are either offered as an add-on capability, tightly integrated with the network equipment to deliver the data service, or potentially integrated with dedicated telecommunications hardware at a customer's premise location.

Four common varieties of fixed Interconnected VoIP which ECG does not offer would be:

A. Fiber-based services terminating service to a Fiber Optical Network Termination (ONT) device.

In this product, an Internet provider delivering fiber optic service to a building installs their fiber optic cables in the ground or on utility poles, ultimately delivering fiber optic cables that are physically attached to the building. An ONT is installed inside or on the outside of the premises. These devices often provide

two different points of connection to customers: (1) A Copper Gigabit Ethernet connector provided for Internet service. (2) A RJ11 POTS connector for telephony service. This service is fixed because of the location of the fiber optic cabling installed at the customer premises.

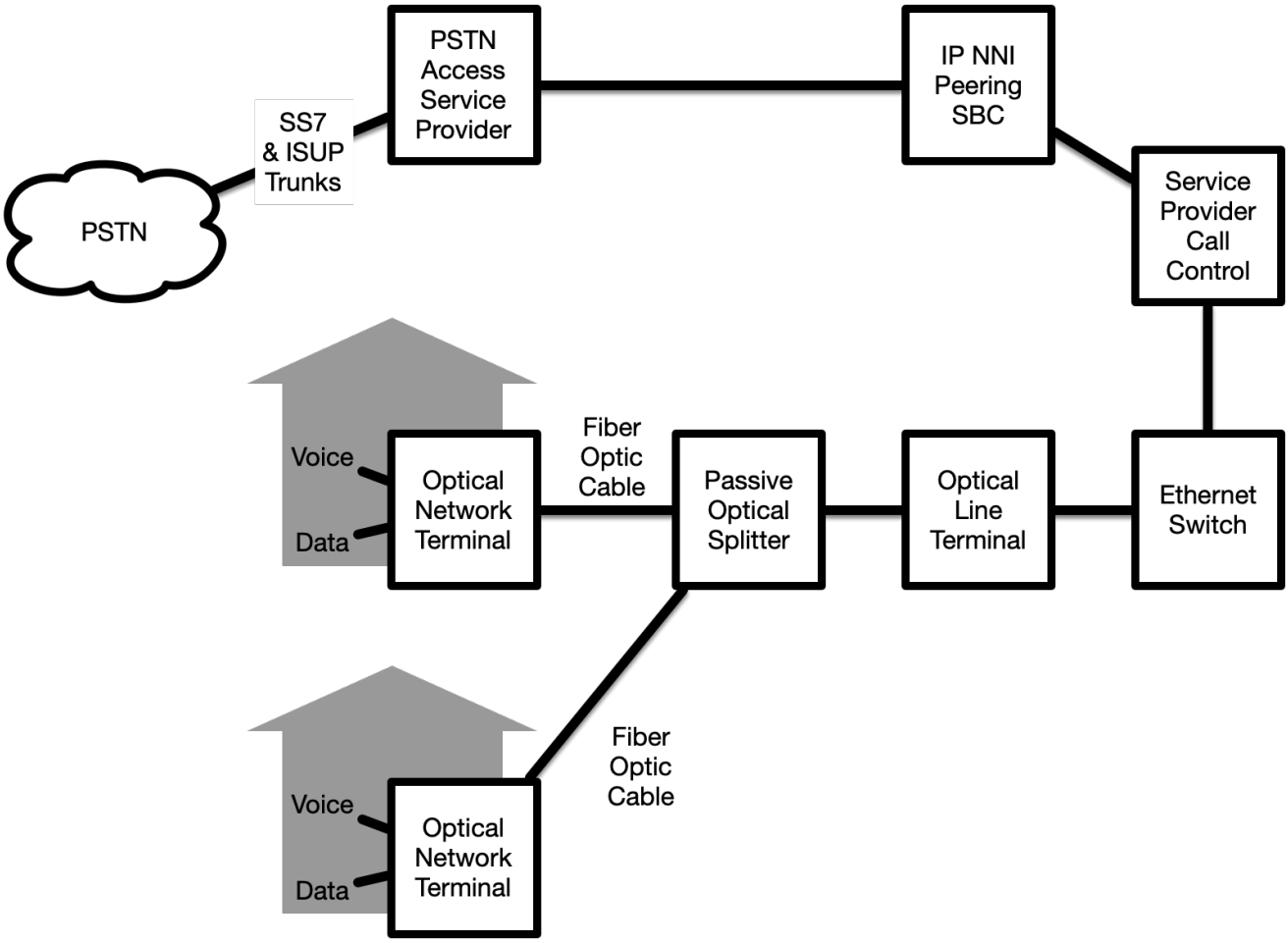

Figure 1. Fiber-based Internet and Voice service is intrinsically associated with the fiber optic cabling and equipment installed at a location.

B. Copper-based services for High-Speed Internet and Voice.

In this product, an Internet service provider would offer both Internet and voice services. Using Copper coax connections from Cable Modem Termination System (CMTS) headend, the data link is physically connected through buried cables or connections on utility poles. The physical cable is installed into the premises and ultimately connected to a Cable Modem / eMTA (Embedded Multimedia Terminal Adapter).

The eMTA function provides an RJ11 POTS port. This service is fixed because of the location of the coax cabling installed at the premises.

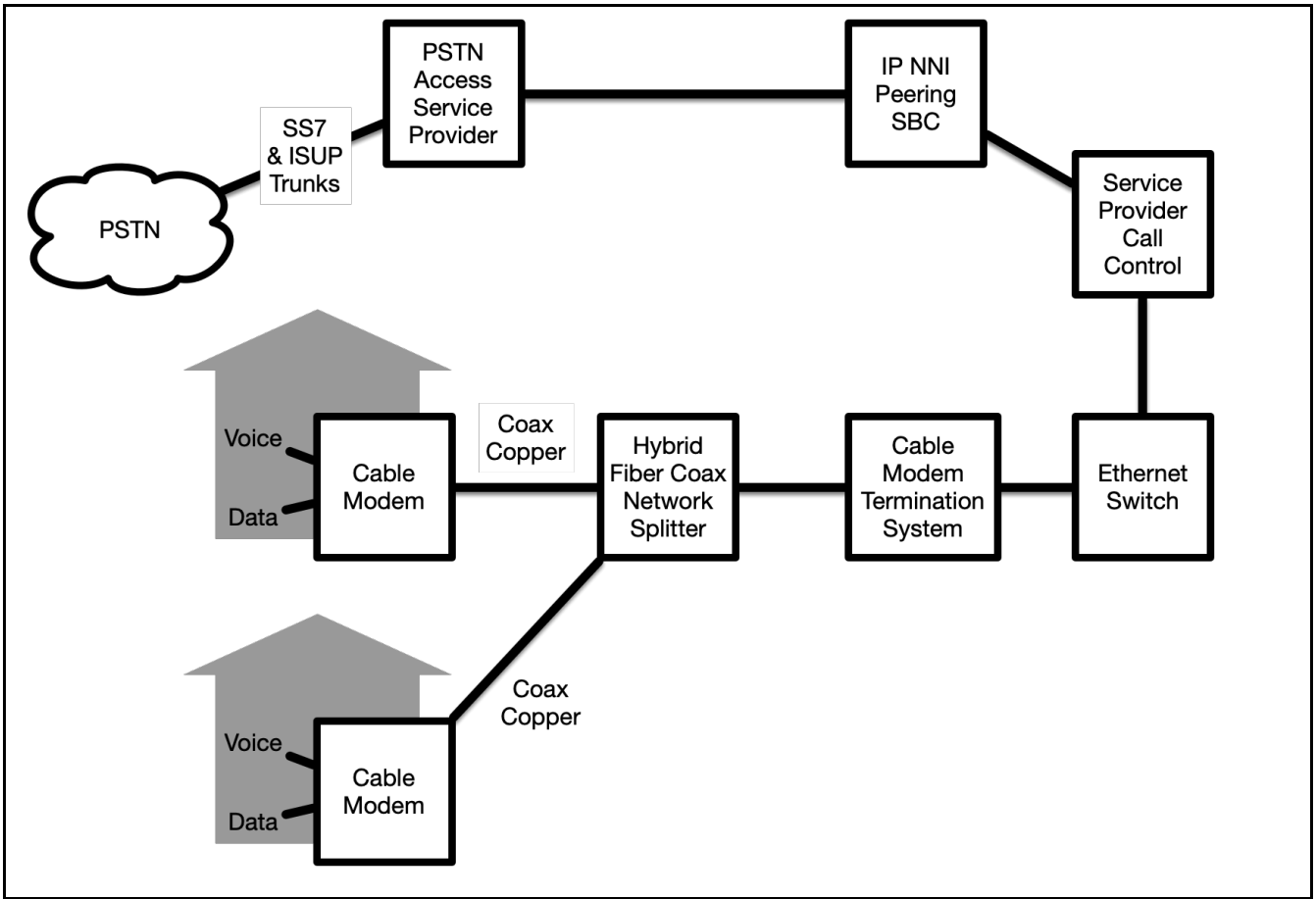

Figure 2. Copper Coax delivered by a Hybrid Fiber Coax (HFC) Voice service is intrinsically associated with the coax cabling and Cable Modem used at a customer premise.

C. Business SIP Trunks Delivered via Integrated Access Device (IAD).

In this product, a service provider installs an Integrated Access Device (IAD) at a location to provide voice service to an existing PBX or Call Center platform. The IAD needs a data connection to link back to the service provider; typically, this is delivered on a Gigabit Ethernet connection. The IAD is physically connected via DS-1 cable, or potentially many POTS ports, to telephone equipment within the premises. As an example, large entertainment venues such as Madison Square Garden in New York City have hundreds of POTS ports for connections to legacy equipment and specialized show production devices.

As another example, a call center platform supporting customer service agents can have ISDN PRI interfaces, which are intended to connect DS-1/T1 service to a telephone company. This service is fixed because of the Service Provider provisioning binding the service to a single static IP address and because of the physical location of the legacy PBX device installed at a location.

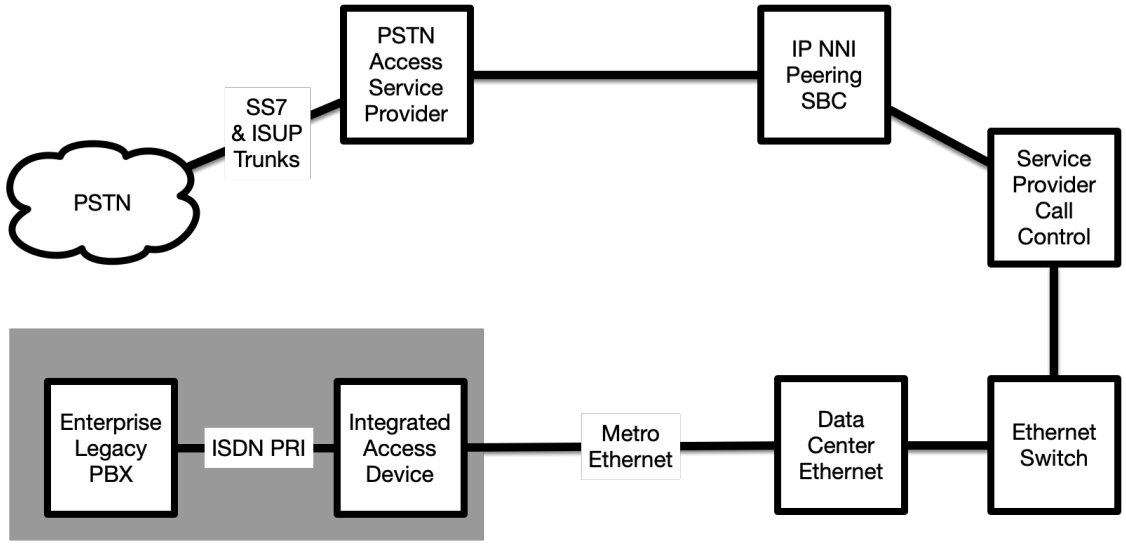

Figure 3. Specialized PBX and Call Center equipment is connected through ISDN PRI protocols over DS-1/T1 lines within a customer premise. This is intrinsically local to the physical equipment and engineered to work using a single defined IP address at the customer's premise.

D. Voice Network-to-Network Interface (NNI).

A final fixed-Interconnected offering is voice via SIP trunks delivered over fixed transport to a data center. This product is used by Voice Service Providers for reliable connectivity that does not depend on the Internet. It is generally delivered over fiber optic connection to data centers with dedicated connections in the Session Border Controller (SBC) equipment operated by the voice Service Providers. These services use private data transport -- not the Internet. This provides reliable access to Interconnected PSTN calling services even in cases of Internet Distributed Denial of Service (DDoS) attacks. Private links built on network links that do not rely on the Internet include those delivered to state and federal government clients such as ECG's clients (e.g., State of Virginia, State of Maryland, US Department of Justice) along with Voice Service Providers (e.g., Bandwidth.com, Microsoft). This service is fixed because of the Service

Provider provisioning binding the service to a single static IP address and the data transport equipment.

2. Can interconnected VoIP service consist of both fixed and nomadic interconnected VoIP services at the same time? If yes, explain the technology and physical equipment that enables this hybrid service. Provide diagrams, figures, descriptions, etc. Under what type of service plan(s) would this hybrid fixed and nomadic service be sold to the customer? Provide brochures, links to company service/products websites, etc.

ANSWER: A Service Provider could hypothetically design a fixed VoIP service that delivers calls to a certain telephone number, while at the same time offering a nomadic, mobile service allowing the use of the same telephone number from a mobile application. For example, a mobile device would run an app to register for service at the Service Provider, using a mobile (Cellular) data plan and connecting to the Internet. At the same time, a fixed service could be delivered to a business premise.

3. For companies offering interconnected VoIP service, which of the following types of interconnected VoIP service do you offer? Provide brochures, links to company service/products websites, etc.

(a) Interconnected VoIP service without any distinction of the types below in b-f

(b) Fixed.

(c) Nomadic.

(d) Standalone.

(e) Over-the-top.

(f) Hybrid.

ANSWER: Our primary business is in technical services for service providers in California and around the nation. Our customers are in Georgia (LATA 444), we offer only over-the-top Interconnected VoIP service using the same technology and network design principles of our Over-the-top (OTT) clients. Our services in this are offered through direct sale and demonstration.

4. Answer separately for each type of interconnected VoIP service identified in response to Question 2:

(a) Explain whether and how the service is restricted to use at a single location.

ANSWER: No restrictions confine the service to a single location.

(b) Explain whether the company management platform, network, or operating system/software, or any other network operation management tool have the capability to determine the location of the customers/users at both (or more) ends of the voice call.

ANSWER: We have no way to determine the location of our customer with any reliability, and we are aware of no technical feasible ways of doing this that would apply to the technology offered. When it becomes technically feasible, we will be required to automatically detect location changes to ensure that the system can properly communicate a 911 caller's location. (based on our interpretation of 47 CFR § 9.11(b)(4)(ii)(B)(3)(i))

(c) Explain whether the type of interconnected VoIP service is offered "à la carte" or bundled with additional type(s) of interconnected VoIP service listed in Question 2, and if so which type(s).

ANSWER: Our Over-the-top services are bundled a la carte.

(d) Explain how the service connects to the Public Switched Telephone Network (PSTN).

ANSWER: Consistent with common designs of Voice Service Providers: customers use devices that send SIP signaling via the Internet to a Session Border Controller (SBC) at our data center in Georgia. When that customer calls through the PSTN, the SBC sends SIP signaling for that call to a PSTN service provider such as Bandwidth. The audio for that connection flows from the PSTN service provider to our SBC, and then from the SBC to the customer device via the Internet.

(e) Explain if the interconnected VoIP service is compatible with wireline (copper, coaxial cable, fixed wireless), wireless (mobile/cellular, satellite), or both wireline and wireless internet access.

ANSWER: The services we offer are compatible with all types of internet that provide no more than 0.01% packet loss, 100 ms maximum one-way latency, less than 60 ms jitter (maximum variation in arrival time), 0.1 Mbps of transmission in each direction. Certain cellular and satellite services are not compatible due to poor packet delivery performance.

(f) State whether internet access is bundled with the interconnected VoIP service, is offered "à la carte" by the same company providing the interconnected VoIP service, or not offered by the same company and the user must independently obtain internet access.

ANSWER: The users must acquire Internet access independently of the Voice services.

(g) If internet access is bundled or offered "à la carte" in conjunction with the interconnected VoIP service, explain if such internet access is sold by the same company offering the interconnected VoIP service, by an affiliate of the company offering the interconnected VoIP service, or is resold from a wholesale internet access provider unaffiliated with the company offering the interconnected VoIP service.

ANSWER: This question does not apply to this respondent as we do not offer Internet services outside of our data center.

(h) Explain if the interconnected VoIP service includes an Internet portal allowing customers to make and receive calls from internet access points other than the internet access point included with their subscription.

ANSWER: This question does not apply to this respondent as we do not offer Internet services outside of our data center.

(i) Explain if the interconnected VoIP service includes an application for a mobile device.

ANSWER: Users may use the Cisco Webex app to access their services, allowing placing and receiving calls from a mobile client (Android phone, Tablet, Apple iPhone, iPad, Mac or Windows Computer).

(j) Describe any physical equipment that is necessary for the customer to connect with PSTN, and state whether the physical equipment required is offered bundled with the interconnected VoIP service, offered "à la carte" in conjunction with the interconnected VoIP service, or whether the customer must independently obtain the physical equipment.

ANSWER: No physical equipment is necessary to access the services besides some device.

(k) State if the service offered is free or for compensation.

ANSWER: Services are invoiced monthly.

5. For your voice service customers for whom service is enabled with interconnected VoIP, what percentage are able to use their service from any Internet access point?

ANSWER: 100%

(a) If the answer differs for residential voice service and business voice service, answer separately. If your company serves only residential or business customers, include this information in your answer.

ANSWER: All customers are business customers.

6. For companies selling internet access or access to the PSTN:

(a) Is the access offered retail or wholesale? Describe the type or types of networks including physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

ANSWER: Not Applicable.

(b) Is the access sold "à la carte," bundled with voice service, or both?

ANSWER: Not Applicable.

(c) Is the access resold, or provided over facilities owned and operated by your company?

ANSWER: Not Applicable.

(d) If access is provided over physical facilities owned and operated by your company, describe in detail the physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

ANSWER: Not Applicable.

7. Does your company provide interconnected voice service on platforms other than Internet Protocol (IP)?

ANSWER: No.

(a) If yes, state and briefly describe the major technolog(ies) by which your company enables the provision of interconnected voice service.

ANSWER: Not Applicable.

(b) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of residential interconnected voice customers.

ANSWER: Not Applicable.

(c) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of business interconnected voice customers.

ANSWER: Not Applicable.

(d) What percentage of customers in your telephone service area are offered a choice of the underlying technology by which their interconnected voice service is provisioned?

ANSWER: Not Applicable.

(e) If one of the technologies by which your company provisions voice is circuit-switched, what percentage of residential customers subscribed to circuit-switched service have the option to retain circuit-switched voice service?

ANSWER: Not Applicable.

(f) Is it your company's practice to consult with your customers or notify your customers regarding a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: Not Applicable.

(g) How are your customers made aware when there is a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: Not Applicable.

EXHIBIT B

Anonymous CCA Member #1

Provider of Retail Interconnected VoIP Services to Business Customers

CLOUD COMMUNICATIONS ALLIANCE (CCA)
MEMBER RESPONSES TO QUESTIONS IN ATTACHMENT A
OF ALJ'S FEBRUARY 16, 2023 RULING

1. What is the technological difference between fixed and nomadic interconnected VoIP service? Provide definitions for these services and examples of providing these services to customers, including brochures, links to company service/products websites, etc.

ANSWER: Fixed interconnected VoIP service (Fixed) is unusual and is not supported as a routine offering by our company. The market requirement of flexible and reliable service delivery makes nomadic interconnected VoIP (Nomadic), by definition, a requirement.

Fixed requires the end user delivery to not change and be inflexible in the network delivery, the physical location, and the technology points required to operate the service. It assumes a time where dedicated physical circuits for IP based voice delivery were required. In our opinion, this service type is inferior in that it reduces service delivery resiliency, increases cost, and artificially limits customer call capacity.

Nomadic delivery is intrinsic to the type of service provided by the interconnected VoIP carrier as identified by the FCC requirement for all interconnected VoIP service providers to support E911. This is spelled out as "Obtain a customer's physical location prior to service activation, and provide one or more easy ways for customers to update the location they have registered with the provider if it changes." (https://www.fcc.gov/consumers/guides/voip-and-911-service) The very nature of the service is that the end user can change their position without informing the service provider and therefore we are affirmatively required to provide ways that end user can update their E911 service address location.

Nomadic also has several characteristics not shared with Fixed:

- Calls can be placed to either a phone system, IP based telephone instrument, or softphone application on a mobile device, PC, tablet, or Internet of Things device. Any one of those devices can be at any one physical location for any amount of time or mobile as long as they are connected to the public Internet. These devices can change, be upgraded, and be modified without the provider's required knowledge. Our service allows the business customer to replace

or upgrade phones, load software on mobile computers, and use apps on mobile phones all connected to our service. Fixed does not support moving from one network to another or replacing any equipment in the service delivery path without direct involvement of the service provider.

- In our Nomadic service we allow for connection as long as the end user software or device is able to reach any public IP address in the US, Canada, Caribbean, Western Europe, and certain Asian Countries. Fixed is only accessible from the one IP address or private network to which it is connected.

- E911 is only set at time-of-service activation in a Fixed delivery. Nomadic requires the ability to have the E911 location to be updated as the end user moves and connects from another location.

- Fixed service does not allow for flexible disaster recovery and is tied to a physical location. The disaster recovery plan in a Fixed service requires a secondary location with another fixed service. The benefit of Nomadic service delivery is that disaster recovery can be provided in a distributed manner. An office of 10 people can take their software devices and continue business operations from home, Starbucks, a library parking lot, or a secondary office location.

- Nomadic provides resiliency in business continuity. The pandemic proved out the ability to work from anywhere on any device. It is our assumption that business will not revert to the Fixed model as it is too restricting given the intrinsically Nomadic nature of their operations, workforce, and IT networking environs.

2. Can interconnected VoIP service consist of both fixed and nomadic interconnected VoIP services at the same time? If yes, explain the technology and physical equipment that enables this hybrid service. Provide diagrams, figures, descriptions, etc. Under what type of service plan(s) would this hybrid fixed and nomadic service be sold to the customer? Provide brochures, links to company service/products websites, etc.

ANSWER: Yes, it can consist of both Fixed and Nomadic interconnected VoIP service at the same time. However, our perspective is that any Fixed component reduces the service resiliency and ultimately has a negative impact on both the value and satisfaction of the customer.

Fixed, in our experience, requires a single path of delivery of the service increasing the risk of service failure. Our service is constructed as Nomadic in any delivery scenario to allow the customer, in the most common of circumstances, to recover from equipment, network, or electricity deliver failures. And in the less likely of scenarios to provide service and business continuity due to fire, earthquake damage, or other natural disasters.

The method of Nomadic delivery by default is to allow customers to connect to the service using a domain name to find one of our service-delivering data centers in the public Internet. It only requires adequate Internet access to have the service delivered via the public Internet.

In the rare instance where a customer may have requested a private connection to our service for the purposes of security or quality management, the customer still has service available via mobile devices or secondary physical devices via the public Internet.

As an FCC regulated entity, we are required to provide the customer the ability to modify their E911 location as needed when they move their physical location.

3. For companies offering interconnected VoIP service, which of the following types of interconnected VoIP service do you offer? Provide brochures, links to company service/products websites, etc.

- **(a) Interconnected VoIP service without any distinction of the types below in b-f**
- **(b) Fixed.**
- **(c) Nomadic.**
- **(d) Standalone.**
- **(e) Over-the-top.**
- **(f) Hybrid.**

ANSWER: As we understand the definitions, we offer Nomadic and Over-the-top services.

4. Answer separately for each type of interconnected VoIP service identified in response to Question 2:

(a) Explain whether and how the service is restricted to use at a single location

ANSWER: We have no restriction to use at a single location. The customer has a contractual obligation to make use of our ability for an authorized user to change their E911 location when they move and if they are consuming E911 services.

(b) Explain whether the company management platform, network, or operating system/software, or any other network operation management tool have the capability to determine the location of the customers/users at both (or more) ends of the voice call.

ANSWER: We can determine that a customer has changed the IP address they are using to access the service. This is such a routine instance that today, we do not alert or alarm when that situation occurs, instead it is available as a troubleshooting point of information if the customer moves location and experiences any quality issues.

(c) Explain whether the type of interconnected VoIP service is offered "à la carte" or bundled with additional type(s) of interconnected VoIP service listed in Question 2, and if so which type(s).

ANSWER: If we understand this question correctly, we do not bundle different types of service as the nature of our service is Nomadic as a feature.

(d) Explain how the service connects to the Public Switched Telephone Network (PSTN).

ANSWER: Customers connect to the service via public Internet access, or in rare cases via private network connection while maintaining Nomadic qualities at its core. The customer's devices have a configured domain name that represents multiple IP Addresses on our network.

The purpose of this is to use the intrinsic benefit of Domain Name Service (DNS) Service Records (SRV). The customer phone, mobile device, or softphone on tablet, desktop or IOT device (Endpoint), will connect to the Internet and will use the configure domain name to use their subscribed Domain Name Server service to look up the appropriate IP address, represented individually or as a portion of an SRV record, on our network for the user's device or software to connect.

With the use of an SRV record, which is available as a method to connect for all of our end-user customers, the Domain Name Server will return a list of IP addresses that the end-user may connect to authenticate on our network. We believe that the nature of our core network that allows for connection to any of up to 5 different core network locations, makes any or all end-user services Nomadic no matter what nature of the way the customer is physically connected to the public Internet or if they ever choose to physically move their service.

After connecting to the IP address, that the Domain Name Servers have resolved, the Endpoint will authenticate on our servers and allow calls via Session Initiated Protocol to be setup and connected to our core switch servers. The core switch infrastructure processes the call internally and then passes the call to our Session Border controllers which are connected to other service providers if the call destination is outside of our network. If the call is bound for a subscriber on our network the call is routed back internally and to the internal call target.

(e) Explain if the interconnected VoIP service is compatible with wireline (copper, coaxial cable, fixed wireless), wireless (mobile/cellular, satellite), or both wireline and wireless internet access.

ANSWER: Our service is compatible with any type of adequate Internet access. In most cases both wireline and wireless Internet access is adequate. There are types of satellite delivered access that are not adequate due to network delay.

(f) State whether internet access is bundled with the interconnected VoIP service, is offered "à la carte" by the same company providing the interconnected VoIP service, or not offered by the same company and the user must independently obtain internet access.

ANSWER: In most cases the customer independently obtains Internet access for whatever the customer perceives are locations that require adequate Internet access to access our services. We currently have less than 0.1% of our end-user customers that are also purchasing Internet access in addition to interconnected VoIP services. Even if we did offer the service, it would not be a limiting factor to delivering our interconnected VoIP services as it is intrinsically Nomadic. The customer could use the Internet access at their main location, the local Starbucks, an airport lounge, or the public library.

(g) If internet access is bundled or offered "à la carte" in conjunction with the interconnected VoIP service, explain if such internet access is sold by the same company offering the interconnected VoIP service, by an affiliate of the company offering the interconnected VoIP service, or is resold from a wholesale internet access provider unaffiliated with the company offering the interconnected VoIP service.

ANSWER: We do not own any facilities to deliver Internet access services. Even if we did own facilities to deliver Internet access, the nature of our service offering would still be Nomadic as end-users can connect using any adequate Internet access.

(h) Explain if the interconnected VoIP service includes an Internet portal allowing customers to make and receive calls from internet access points other than the internet access point included with their subscription.

ANSWER: Our service automatically through the nature of its delivery, see 4 (d), making the service Nomadic without the need for the user to use an Internet portal to make any changes to connect to the service. Customers can connect from any adequate Internet access, such as another corporate location, a Starbucks, an airport lounge, or a public library.

(i) Explain if the interconnected VoIP service includes an application for a mobile device.

ANSWER: Yes, the service includes applications that can be made available on tablet, mobile phone, desktop, laptop, or IOT devices.

(j) Describe any physical equipment that is necessary for the customer to connect with PSTN, and state whether the physical equipment required is offered bundled with the interconnected VoIP service, offered "à la carte" in conjunction with the interconnected VoIP service, or whether the customer must independently obtain the physical equipment.

ANSWER: The customer can operate the service without any required physical equipment specified or provided for our service. In many cases, the end-user requires no special equipment at all except for equipment to connect to the public Internet.

(k) State if the service offered is free or for compensation.

ANSWER: Our interconnected VoIP service is offered for compensation.

5. For your voice service customers for whom service is enabled with interconnected VoIP, what percentage are able to use their service from any Internet access point?

ANSWER: All of our customers are able to use their service from any adequate Internet access point.

(a) If the answer differs for residential voice service and business voice service, answer separately. If your company serves only residential or business customers, include this information in your answer.

ANSWER: We only offer business voice service.

6. For companies selling internet access or access to the PSTN:

(a) Is the access offered retail or wholesale? Describe the type or types of networks including physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

ANSWER: We do not offer Internet access as a bundled service in California currently.

(b) Is the access sold "à la carte," bundled with voice service, or both?

ANSWER: We do not offer Internet access as a bundled service in California currently.

(c) Is the access resold, or provided over facilities owned and operated by your company?

ANSWER: We do not offer Internet access as a bundled service in California currently. In addition, we do not own facilities to deliver such service.

(d) If access is provided over physical facilities owned and operated by your company, describe in detail the physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

ANSWER: We do not offer Internet access as a bundled service in California currently. In addition, we do not own facilities to deliver such service.

7. Does your company provide interconnected voice service on platforms other than Internet Protocol (IP)?

ANSWER: Yes, we use IP to deliver our services. We are an Internet Protocol Enabled Service – IPES.

(a) If yes, state and briefly describe the major technolog(ies) by which your company enables the provision of interconnected voice service.

ANSWER: Please see our response to 4 (d) and (h). In addition, the flow is as follows:

1. Customer electronically signs quote inside of our provisioning system.

2. Service is configured in customer facing web portal that automatically provision the core switch and the Session Border Controllers.

3. Customer telephones or Endpoint software is provisioned with the Domain Name to connect to our service.

4. The customer Endpoints are connected to adequate Internet access and the Endpoints connect to one of 5 of our data centers located around the United States.

5. The endpoints are confirmed to be provisioned by a combination of staff and systems

6. The endpoints can now be moved – for example, an Endpoint can be taken home by a customer employee on Mondays, Thursdays, and Fridays, and brought to the office on Tuesdays and Wednesdays without any additional provisioning.

(b) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of residential interconnected voice customers.

ANSWER: We have no residential voice customers – 0%.

(c) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of business interconnected voice customers.

ANSWER: We only sell to business customers – 100%

(d) What percentage of customers in your telephone service area are offered a choice of the underlying technology by which their interconnected voice service is provisioned?

ANSWER: 100%

(e) If one of the technologies by which your company provisions voice is circuit-switched, what percentage of residential customers subscribed to circuit-switched service have the option to retain circuit-switched voice service?

ANSWER: We have no customers that are circuit switched.

(f) Is it your company's practice to consult with your customers or notify your customers regarding a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: We consult with customers as to what we believe is the best Internet access qualities to consider when they procure their service if they request our input. We do not control what they choose or how they connect. If the question is if the service is IP or circuit switched, the nature of our service is IP based.

(g) How are your customers made aware when there is a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: All of our customers are aware that they are subscribing to Voice over IP service by the nature of the contract they sign with us.

EXHIBIT C

Anonymous CCA Member #2

Provider of Retail Interconnected VoIP Services to Business Customers

CLOUD COMMUNICATIONS ALLIANCE (CCA)
MEMBER RESPONSES TO QUESTIONS IN ATTACHMENT A
OF ALJ'S FEBRUARY 16, 2023 RULING

1. What is the technological difference between fixed and nomadic interconnected VoIP service? Provide definitions for these services and examples of providing these services to customers, including brochures, links to company service/products websites, etc.

ANSWER: Fixed interconnected VoIP is a VoIP service with technological limitations that prevent the service from being used if the device through with the service is obtained is moved from its registered operational location.

Nomadic interconnected VoIP service, on the other hand, is a service which can be used regardless of the location of the device through which the service is obtained. Such services can be obtained through apps downloaded to a computer, a smartphone, or another similar device or through VoIP-compatible phone systems such as those provided by hardware suppliers such as Poly or Cisco. As the name suggests, such equipment can be moved at will and permit the user to make and receive calls regardless of the location of the equipment.

The FCC recognizes this fundamental mobility in its requirements for 911 services for consumers of nomadic interconnected VoIP. Because such nomadic VoIP services "can be used from virtually any internet connection anywhere", the provider of a nomadic VoIP service must obtain the user's initial physical location before activating the service, provide an easy way to update that location, and transmit 911 calls to the emergency services call center appropriate for the current registered location. See fcc.gov/consumers/guides/voip-and-911-service.

2. Can interconnected VoIP service consist of both fixed and nomadic interconnected VoIP services at the same time? If yes, explain the technology and physical equipment that enables this hybrid service. Provide diagrams, figures, descriptions, etc. Under what type of service plan(s) would this hybrid fixed and nomadic service be sold to the customer? Provide brochures, links to company service/products websites, etc.

ANSWER: Presumably, a provider of interconnected VoIP service could simultaneously provide both fixed and nomadic interconnected VoIP services to its customers. However, the statement that a service provider could provide both fixed and nomadic interconnected VoIP services "at the same time" can be misleading, in that it may incorrectly suggest that a user could obtain the fixed or nomadic interconnected VoIP services through the same devices and infrastructure without requiring different equipment or means of engagement with the particular service features. This is incorrect.

Where a user is using fixed VoIP services, that user may obtain such services through the device that is properly integrated into the network and other facilities for which it has been provisioned. That user cannot move the device to another location and still obtain service because the required dedicated physical circuits and technological apparatuses are either not present or not properly provisioned.

A user of nomadic VoIP services, on the other hand, can obtain the services with the minimal requirement of access to public internet. All other requirements for use of the nomadic VoIP services are addressed by the software applications through which the service is provided.

3. For companies offering interconnected VoIP service, which of the following types of interconnected VoIP service do you offer? Provide brochures, links to company service/products websites, etc.

(a) Interconnected VoIP service without any distinction of the types below in b-f

(b) Fixed.

(c) Nomadic.

(d) Standalone.

(e) Over-the-top.

(f) Hybrid.

ANSWER: While the specific meaning of these various "types" of interconnected VoIP service varies depending on the market participant who answers, the company offers nomadic interconnected VoIP service that contains features which can also be variously described as over-the-top or standalone, in that the service can be accessed and used through the public internet so long as the end-user has software or

VoIP devices which can connect to the service, and are not part of the unified communications features of the VoIP service.

4. Answer separately for each type of interconnected VoIP service identified in response to Question 2:

(a) Explain whether and how the service is restricted to use at a single location

ANSWER: Use of the service is not technologically restricted to a single location.

(b) Explain whether the company management platform, network, or operating system/software, or any other network operation management tool have the capability to determine the location of the customers/users at both (or more) ends of the voice call.

ANSWER: In compliance with applicable regulation, the service provides a dispatchable location using a validated physical address or geo-coordinates to PSAPs for emergency calling, through the collection of initial location of calling devices upon registration and the option (and system-generated reminders) to update the location of the calling device upon any use or movement of the device.

(c) Explain whether the type of interconnected VoIP service is offered "à la carte" or bundled with additional type(s) of interconnected VoIP service listed in Question 2, and if so which type(s).

Answer: Not Applicable.

(d) Explain how the service connects to the Public Switched Telephone Network (PSTN).

ANSWER: The service is connected to the PSTN through integration with carrier services provided by entities such as Bandwidth or other telecom carriers.

(e) Explain if the interconnected VoIP service is compatible with wireline (copper, coaxial cable, fixed wireless), wireless (mobile/cellular, satellite), or both wireline and wireless internet access.

ANSWER: The interconnected VoIP service is compatible with wireline or wireless internet access.

(f) State whether internet access is bundled with the interconnected VoIP service, is offered "à la carte" by the same company providing the interconnected VoIP service, or not offered by the same company and the user must independently obtain internet access.

ANSWER: Internet access is not provided by the company.

(g) If internet access is bundled or offered "à la carte" in conjunction with the interconnected VoIP service, explain if such internet access is sold by the same company offering the interconnected VoIP service, by an affiliate of the company offering the interconnected VoIP service, or is resold from a wholesale internet access provider unaffiliated with the company offering the interconnected VoIP service.

Answer: Not Applicable.

(h) Explain if the interconnected VoIP service includes an Internet portal allowing customers to make and receive calls from internet access points other than the internet access point included with their subscription.

ANSWER: End users can make and receive calls from any internet access point.

(i) Explain if the interconnected VoIP service includes an application for a mobile device.

ANSWER: An application for a mobile device is available for users.

(j) Describe any physical equipment that is necessary for the customer to connect with PSTN, and state whether the physical equipment required is offered bundled with the interconnected VoIP service, offered "à la carte" in conjunction with the interconnected VoIP service, or whether the customer must independently obtain the physical equipment.

No Response Provided.

(k) State if the service offered is free or for compensation.

ANSWER: The service is offered for compensation.

5. For your voice service customers for whom service is enabled with interconnected VoIP, what percentage are able to use their service from any Internet access point?

ANSWER: 100%.

(a) If the answer differs for residential voice service and business voice service, answer separately. If your company serves only residential or business customers, include this information in your answer.

6. For companies selling internet access or access to the PSTN:

(a) Is the access offered retail or wholesale? Describe the type or types of networks including physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

No Response Provided.

(b) Is the access sold "à la carte," bundled with voice service, or both?

No Response Provided.

(c) Is the access resold, or provided over facilities owned and operated by your company?

No Response Provided.

(d) If access is provided over physical facilities owned and operated by your company, describe in detail the physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

No Response Provided.

7. Does your company provide interconnected voice service on platforms other than Internet Protocol (IP)?

(a) If yes, state and briefly describe the major technolog(ies) by which your company enables the provision of interconnected voice service.

No Response Provided.

(b) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of residential interconnected voice customers.

No Response Provided.

(c) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of business interconnected voice customers.

No Response Provided.

(d) What percentage of customers in your telephone service area are offered a choice of the underlying technology by which their interconnected voice service is provisioned?

No Response Provided.

(e) If one of the technologies by which your company provisions voice is circuit-switched, what percentage of residential customers subscribed to circuit-switched service have the option to retain circuit-switched voice service?

No Response Provided.

(f) Is it your company's practice to consult with your customers or notify your customers regarding a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: Notifications of improvements and modifications to underlying technology are provided to customers in accordance with such changes.

(g) How are your customers made aware when there is a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: Notifications are provided through various means, including communication through email or other pre-established means and updates to customer-accessible service documentation.

EXHIBIT D

Anonymous CCA Member #3

Provider of Retail Interconnected VoIP Services to Business Customers

CLOUD COMMUNICATIONS ALLIANCE (CCA)
MEMBER RESPONSES TO QUESTIONS IN ATTACHMENT A
OF ALJ'S FEBRUARY 16, 2023 RULING

1. What is the technological difference between fixed and nomadic interconnected VoIP service? Provide definitions for these services and examples of providing these services to customers, including brochures, links to company service/products websites, etc.

ANSWER: We are not aware of any official / legal definition of "fixed" vs. "nomadic" but the FCC and other authorities do have definitions that shows that "Fixed" means the device or equipment used to access the service is physically located in a facility (either at a customer site or the provider site), requires a potentially dedicated internet connection and cannot be relocated without prior arrangements with the VoIP provider.

We therefore can assume "fixed" is only a scenario that describes phone services provided by cable TV / internet provider companies such as Comcast, Cox or Verizon FiOS where the router serves also as the only access point device that the physical phone can connect into (essentially a replacement to the old PSTN landline) and that router cannot be moved to a different location (as it works only with the cables / fiber and other systems deployed by the service provider in the specific address / neighborhood it is intended to be at).

The services all (certainly the vast majority) of interconnected VoIP services provide, rely on internet (data/broadband) provided by a different company. Unless there is some scenario, that we are not familiar with, where the provider of the phone service also provides the internet (perhaps some commercial location such as an office where the interconnected VoIP service is bundled with private broadband).

Therefore, the broadband is "just" a pipe that enables the phone service. The physical phone the interconnected VoIP provider has provisioned can be moved to any other location and do not depend on the broadband service or equipment.

Most interconnected VoIP providers also offer a "softphone" (regular phone capabilities from your laptop) or mobile apps (phone capabilities offered as an app on a mobile phone but that do not use the mobile network but rather the Wi-Fi (or 4G / 5G) that the mobile phone service offers.

Many times, referred to as "over the top" service. Bottom line is that Interconnected VoIP services are anything but "fixed" and very much fit the definition of "nomadic";

Examples:

Hosted VoIP PBX appliances (hardware Asterisk/Freeswitch servers).

Refer also to: https://www.ilsos.gov/departments/index/register/volume43/register_volume43_issue30.pdf, page 19.

"Nomadic" means the device used by the customer is not tied to a fixed physical location and can be used anywhere a "internet" or "data" connection allows it to access the VoIP provider service.

Examples: OOMA, Vonage, WhatsApp, etc.

Please refer also to: https://docs.fcc.gov/public/attachments/DA-08-821A1.pdf, page 3, par 3.

2. Can interconnected VoIP service consist of both fixed and nomadic interconnected VoIP services at the same time? If yes, explain the technology and physical equipment that enables this hybrid service. Provide diagrams, figures, descriptions, etc. Under what type of service plan(s) would this hybrid fixed and nomadic service be sold to the customer? Provide brochures, links to company service/products websites, etc.

ANSWER: We believe the answer should be NO meaning that companies starting with RingCentral, to Vonage, to 8*8, and we as well, do not offer fixed VoIP service, as "fixed" should only refer to a service where the end device, the access point and the "pipe" are all fixed and rely on one service.
However, it can be fixed only if proper controls are put in place which would a) require special customization work and b) defeat the purpose of an Interconnected VoIP provider.

3. For companies offering interconnected VoIP service, which of the following types of interconnected VoIP service do you offer? Provide brochures, links to company service/products websites, etc. [JM1] [ar2] [ar3]

(a) Interconnected VoIP service without any distinction of the types below in b-f

(b) Fixed.

(c) Nomadic. V

(d) Standalone.

(e) Over-the-top. V

(f) Hybrid.

4. Answer separately for each type of interconnected VoIP service identified in response to Question 2:

(a) Explain whether and how the service is restricted to use at a single location

ANSWER: It is not.

(b) Explain whether the company management platform, network, or operating system/software, or any other network operation management tool have the capability to determine the location of the customers/users at both (or more) ends of the voice call.

ANSWER: To the extent that the credentials provided to access the service and the IP address used by the endpoints match the provided address (for the customer) and geolocation determination of the IP address of the endpoint, there is a capability, but it is not easy or 100% accurate. If the customer uses a VPN, there is no guarantee.

(c) Explain whether the type of interconnected VoIP service is offered "à la carte" or bundled with additional type(s) of interconnected VoIP service listed in Question 2, and if so which type(s).

ANSWER: Not Applicable.

(d) Explain how the service connects to the Public Switched Telephone Network (PSTN).

ANSWER: We rely on other VoIP carriers (wholesalers) that do terminate to PSTN

(e) Explain if the interconnected VoIP service is compatible with wireline (copper, coaxial cable, fixed wireless), wireless (mobile/cellular, satellite), or both wireline and wireless internet access.

ANSWER: Depends on the device used to access the VoIP service. We work with both. We can forward to any device. We can connect an IP phone or phone adaptor to any router connected to any broadband provider

(f) State whether internet access is bundled with the interconnected VoIP service, is offered "à la carte" by the same company providing the interconnected VoIP service, or not offered by the same company and the user must independently obtain internet access.

ANSWER: Cable companies usually do (like Comcast or Cox); we do not

(g) If internet access is bundled or offered "à la carte" in conjunction with the interconnected VoIP service, explain if such internet access is sold by the same company offering the interconnected VoIP service, by an affiliate of the company offering the interconnected VoIP service, or is resold from a wholesale internet access provider unaffiliated with the company offering the interconnected VoIP service.

ANSWER: Not Applicable.

(h) Explain if the interconnected VoIP service includes an Internet portal allowing customers to make and receive calls from internet access points other than the internet access point included with their subscription.

ANSWER: Our nomadic services do not bundle internet access.

(i) Explain if the interconnected VoIP service includes an application for a mobile device.

ANSWER: We offer a mobile application, but it is not needed in order to receive calls to your mobile device as calls can be forwarded to the device number. The application is needed in order to dial out of the mobile device using the phone number that the customer has with us.

(j) Describe any physical equipment that is necessary for the customer to connect with PSTN, and state whether the physical equipment required is offered bundled with the interconnected VoIP service, offered "à la carte" in conjunction with the interconnected VoIP service, or whether the customer must independently obtain the physical equipment.

ANSWER: No equipment is needed but we do offer physical IP Phones (or ATAs); we offer the phones, and ship them provisioned via a third-party fulfillment company. Otherwise only the equipment or software required to access the service, i.e., computer, smartphone, tablet.

(k) State if the service offered is free or for compensation.

ANSWER: We charge a monthly fee (no long-term contracts).

5. For your voice service customers for whom service is enabled with interconnected VoIP, what percentage are able to use their service from any Internet access point?

ANSWER: All of them.

(a) If the answer differs for residential voice service and business voice service, answer separately. If your company serves only residential or business customers, include this information in your answer.

ANSWER: Not Applicable.

6. For companies selling internet access or access to the PSTN:

(a) Is the access offered retail or wholesale? Describe the type or types of networks including physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

ANSWER: Not Applicable.

(b) Is the access sold "à la carte," bundled with voice service, or both?

ANSWER: Not Applicable.

(c) Is the access resold, or provided over facilities owned and operated by your company?

ANSWER: Not Applicable.

(d) If access is provided over physical facilities owned and operated by your company, describe in detail the physical layer (wired or wireless technologies) and technology used to provide access and (if applicable) to route voice traffic.

ANSWER: Not Applicable.

7. Does your company provide interconnected voice service on platforms other than Internet Protocol (IP)?

ANSWER: No.

(a) If yes, state and briefly describe the major technolog(ies) by which your company enables the provision of interconnected voice service.

Answer: Not Applicable.

(b) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of residential interconnected voice customers.

ANSWER: Less than one percent.

(c) By technology provisioning the service (e.g. IP, circuit- switched, hosted PBX, unified communications as a service, other [specify]), state the percentage of business interconnected voice customers.

ANSWER: Over 99%.

(d) What percentage of customers in your telephone service area are offered a choice of the underlying technology by which their interconnected voice service is provisioned?

ANSWER: Not Applicable.

(e) If one of the technologies by which your company provisions voice is circuit-switched, what percentage of residential customers subscribed to circuit-switched service have the option to retain circuit-switched voice service?

ANSWER: Not Applicable.

(f) Is it your company's practice to consult with your customers or notify your customers regarding a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: Not Applicable.

(g) How are your customers made aware when there is a change in the underlying technology by which the voice service to which they are subscribed is provisioned?

ANSWER: Not Applicable.