IP-IP Interconnection

Facilities-Based VoIP ("managed"/"closed" network) Does NOT involve the Public Internet

* This is not to say COMPTEL views interconnection for OTT VoIP to be regulation of the Public Internet. But in the provision of managed/facilities-based VoIP the public Internet is not involved and, therefore, regulation of the public Internet is impossible.

As Verizon explains to potential FiOS customers:

"To understand the features and quality of FiOS Digital Voice, you first need to know that the service is not the same as the services you get with a little Internet adapter for your modem and phone, ***and it does not ever touch the public Internet***."

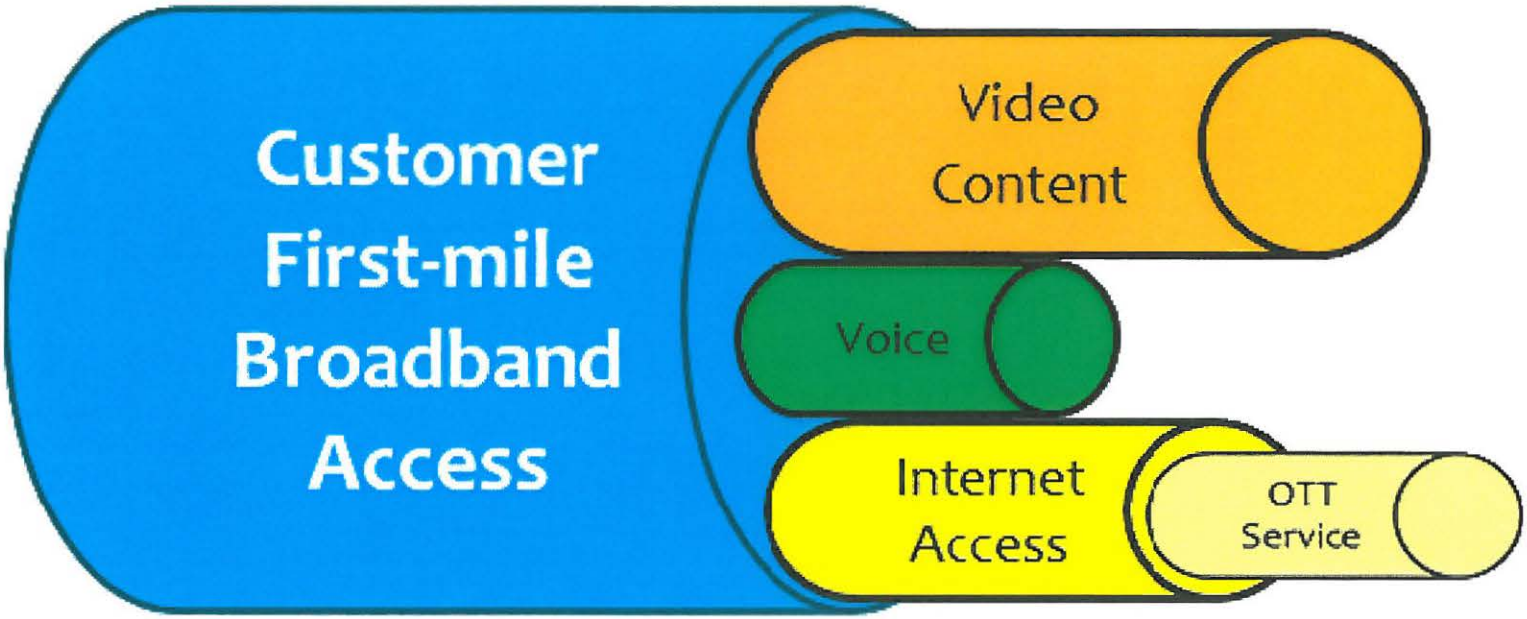
http://newscenter.verizon.com/press-releases/verizon/2010/fios-digital-voice-heres.html (emphasis added).

AT&T is equally clear that its U-verse service is not part of the Internet:

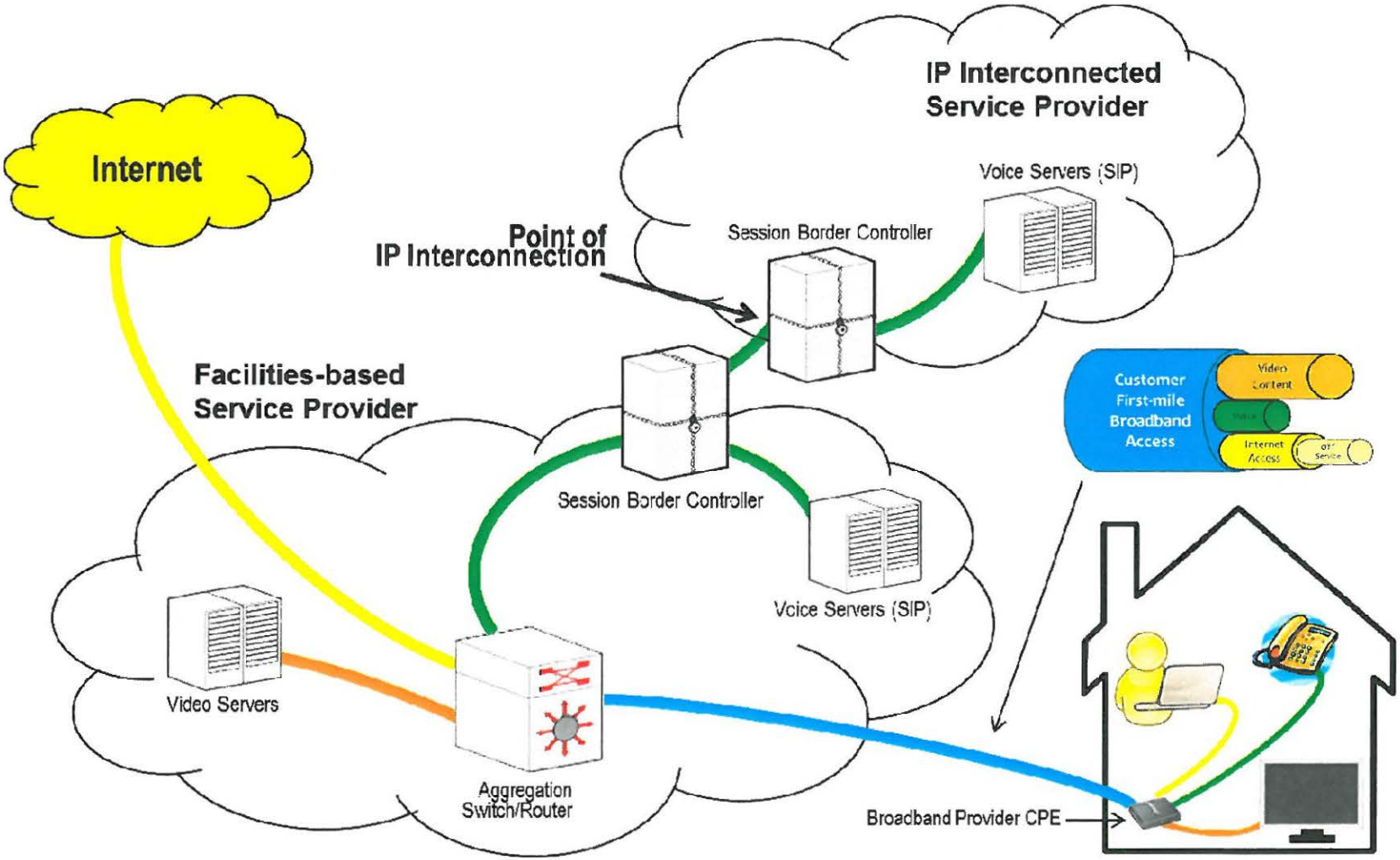
"AT&T U-verse Voice service is provided over AT&T's world-class managed network and not the public Internet. Using one network to provide U-verse services enables AT&T to provide high quality service. Voice over IP ("VoIP") providers who utilize the public Internet are less able to control the traffic and ensure voice quality.... With AT&T U-verse Voice, although you can use your high speed Internet service to manage your AT&T U-verse Voice features, the voice packets ***do not traverse the public Internet***."

http://www.att.com/u-verse/explore/home-alarm.jsp (emphasis added).

No Internet Access Required (unlike OTT)



Facilities-based VoIP Over Managed (Closed) Network Versus OTT



Important Distinctions from OTT

- More Secure
  - OTT, addressing structure is public.
  - Facilities-based, addressing structure is private.
- Quality of Service
  - OTT, best efforts
  - Facilities-based, managed
- Customer Interface is not the Internet.
  - See diagrams

Facilities-Based VoIP Services Are Telecommunications Services

Meets Statutory Definition of Telecommunications Service

- Offering of the transmission of information of the user's choosing, "without change in the form or content of the information as sent and received," regardless of facilities used. 47 U.S.C 153(43) and (46).
- The communicating end-users of a voice call do not experience a change in the information from what is sent and what is received, regardless of whether the call originates and/or terminate in IP.
- Information services do ***not*** include "any use of [capabilities] for the management, control, or operation of a telecommunications system or the management of a telecommunications service. " 47 U.S.C. 153(20).
- Act is technology neutral

Commission has looked at Protocol Conversion

- As the FCC has stated: "the protocol processing that takes place incident to phone-to-phone IP telephony does not affect the service's classification, under the Commission's current approach, because it ***results in no net protocol conversion to the end-user.***" *IP-in-the-Middle Order*, FCC 04-97, ¶7 (emphasis added).

- Commission examples of protocol conversion services that constitute telecommunications services:
  - involving communications between an end-user and the network itself (e.g. for initiation, routing, and termination of calls) rather than between or among users;
  - in connection with the introduction of a new basic network technology (which requires protocol conversion to maintain compatibility with existing CPE); and
  - involving internetworking (conversions taking place solely within the carrier's network to facilitate provision of a basic network service, that result in no net conversion to the end user).

  Non-Accounting Safeguards Reconsideration Order, FCC 97-52, ¶2.

Section 251(c)(2) Applies to IP Interconnection

- Commission found that all carriers (including those traditionally classified as IXCs) may obtain interconnection pursuant to section 251(c)(2) for the purpose of terminating calls originating from their customers residing in the same telephone exchange (i.e., non-interexchange calls)." *Local Competition Order*, FCC 96-325, ¶ 190.

- IP interconnection is used for terminating calls that originated in the same telephone exchange.

- Commission, in the *Vonage Order*, never found VoIP to be solely an interexchange service. It merely found in the case of nomadic service, interstate and intrastate were indistinguishable.

- This is not even the case in facilities-based VoIP services, as location is known.

IP Interconnection is a Point of Interconnection

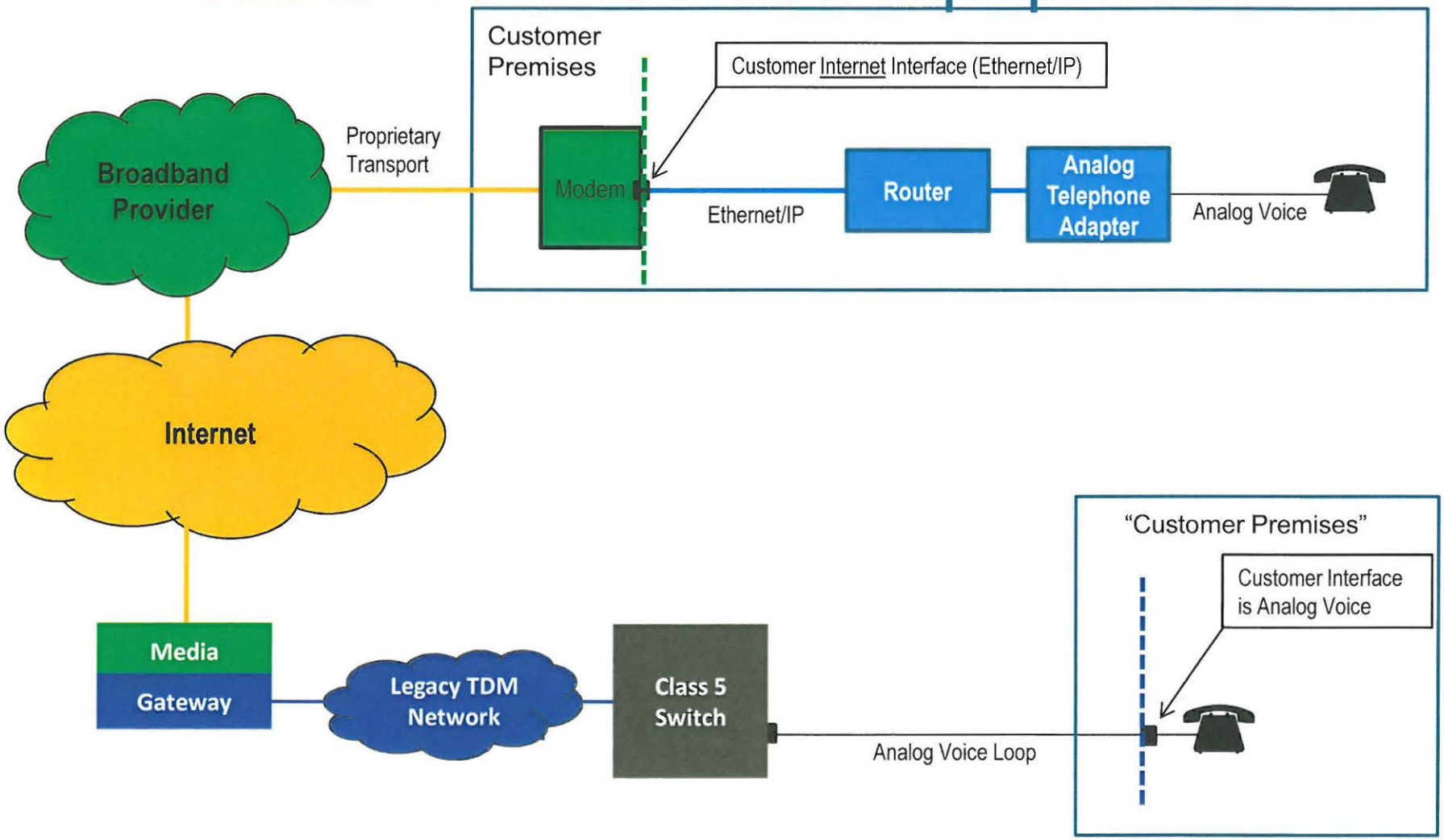
- The Act provides for interconnection at "***any*** technically feasible point within the carrier's network." 47 USC 251(c)(2)(B) (emphasis added).

- Example: The interface port of a Session Border Controller is a point of interconnection. SIP is the signaling protocol associated with that POI. (See diagram page 6).

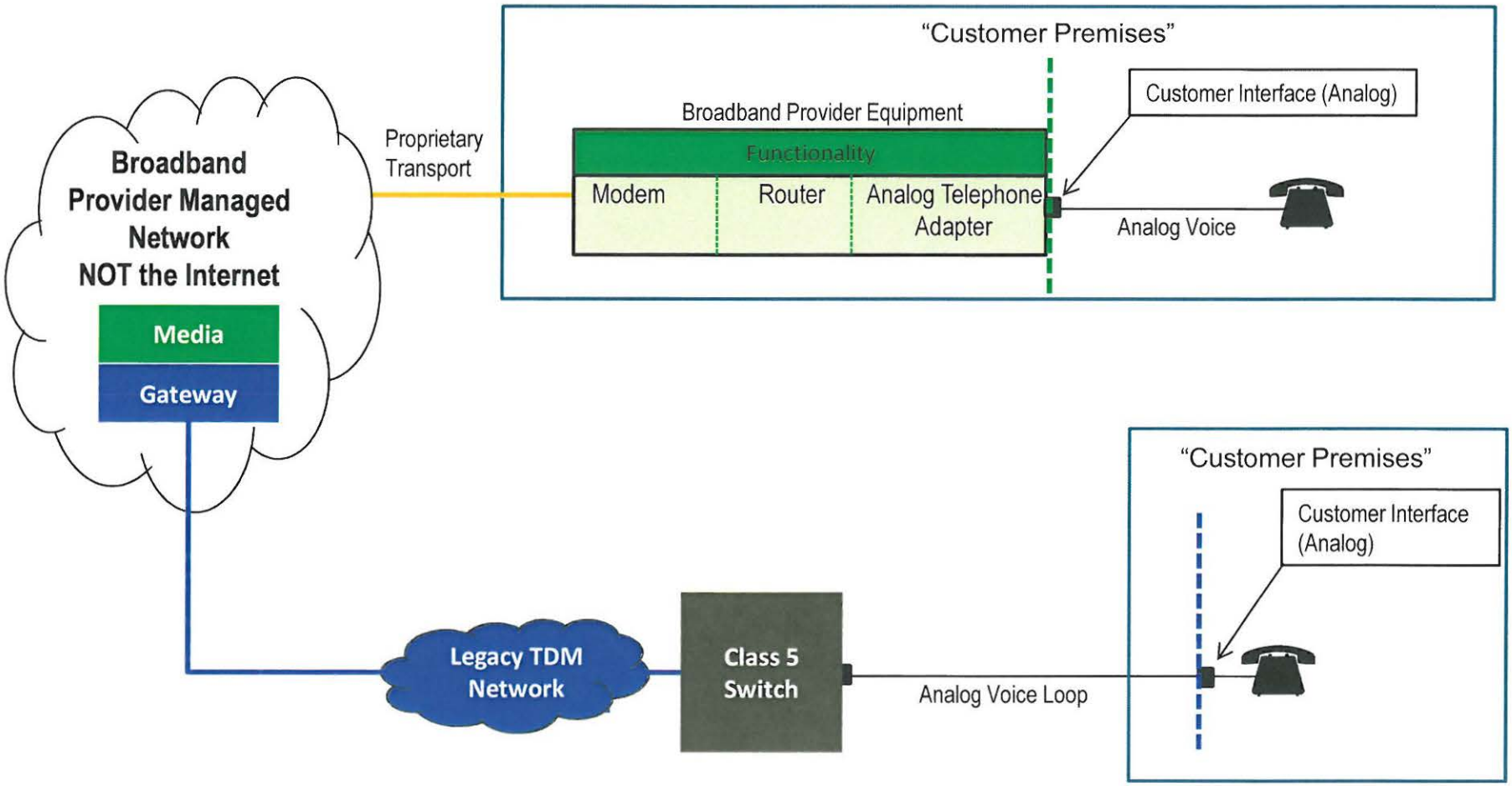
- As AT&T explains: "The Border Controller is the first entry point in the AT&T network and includes both security and transport functions, with SIP being a signaling protocol." http://www.business.att.com/content/whitepaper/w_ATT_CARTS.pdf

Various Scenarios

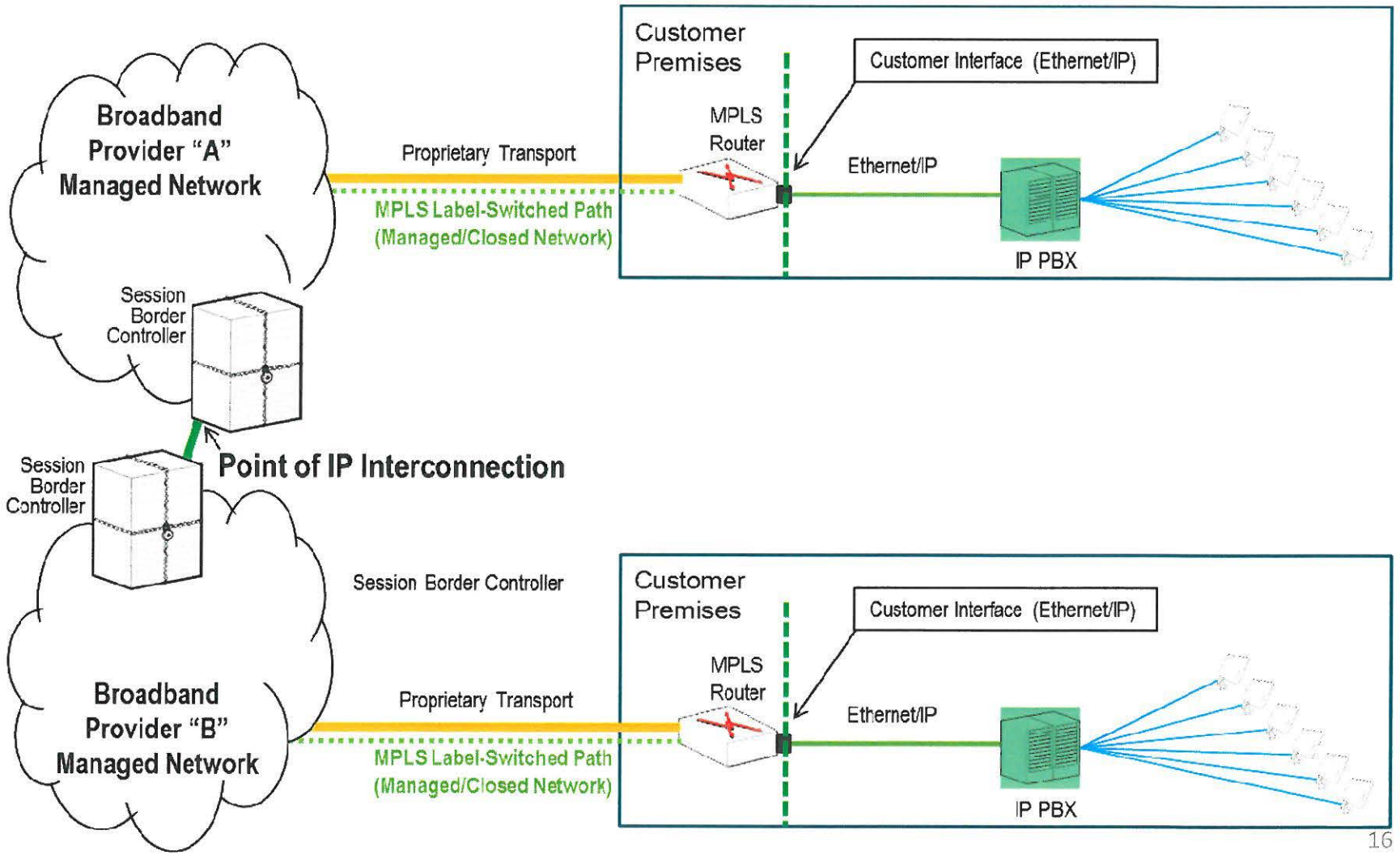
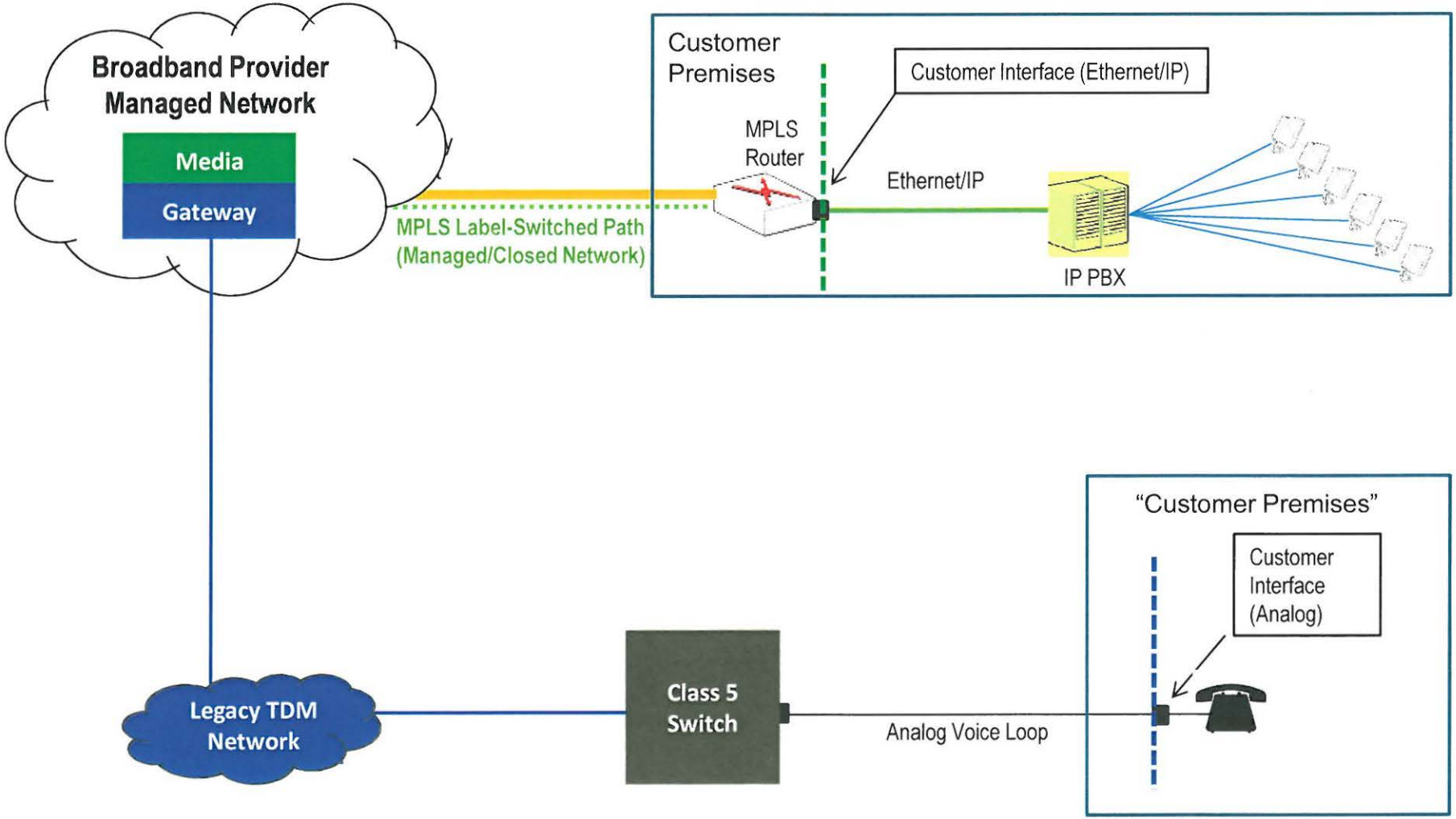
OTT VoIP with Customer Provided Equipment



Facilities-based VoIP with Broadband Provider Equipment



Facilities-based VoIP Using IP End-to-End



Facilities-based VoIP with Customer-provided Equipment