



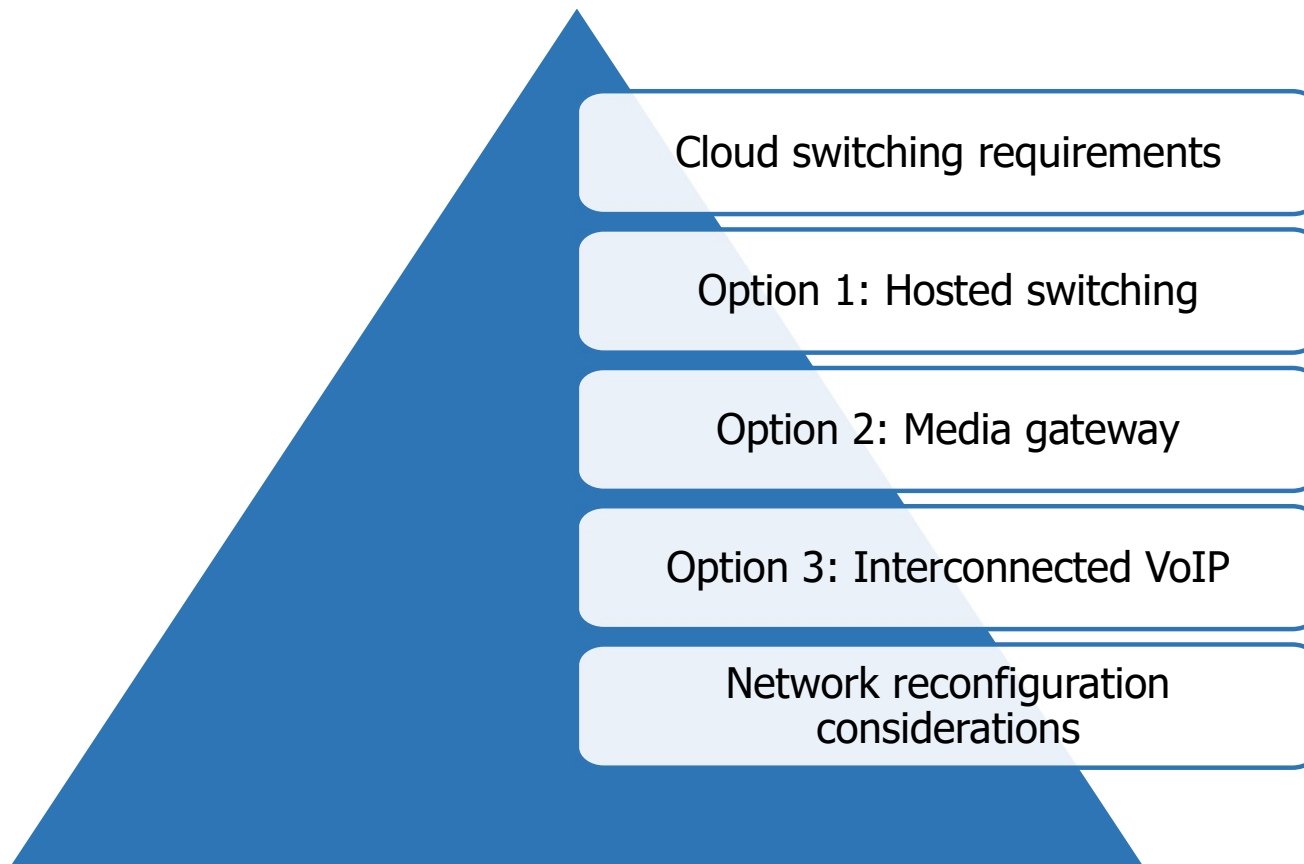
Cloud Switching Considerations

2025 OTA Summer Conference



Presented by:
Teri Kessler
Manager – Tariffs and Training
Southwestern Region
tkessler@neca.org

Agenda



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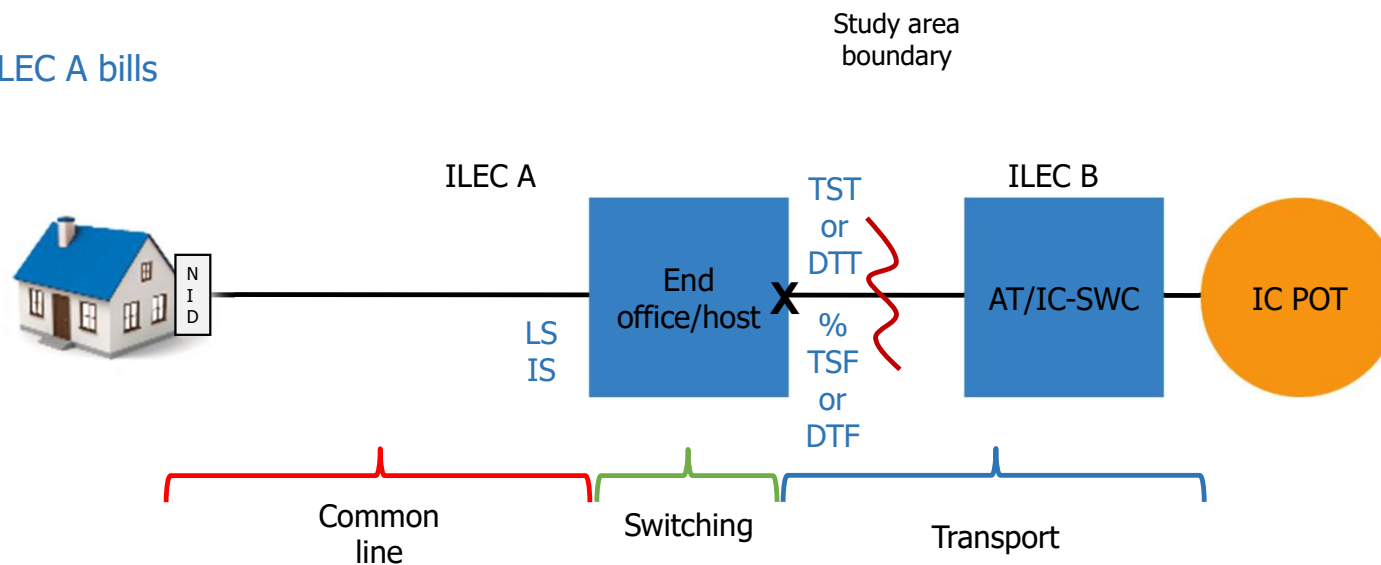
Cloud switching requirements

- NECA Tariff FCC No. 5 permits an ILEC to provide local switching using its own switch or by obtaining switching functionality from another entity **within the same local access transport area** as the end user being served
 - Also requires the access tandem be located within the LATA
- The ILEC must be able to measure its traffic and bill end office charges
- NECA Tariff FCC No. 4 and the local exchange routing guide must be modified to reflect the new switching location and/or reclassifications of switching equipment
- These requirements do not apply to **nonregulated interconnected VoIP**

Option 1: Hosted switching

Before hosted switching

ILEC A bills

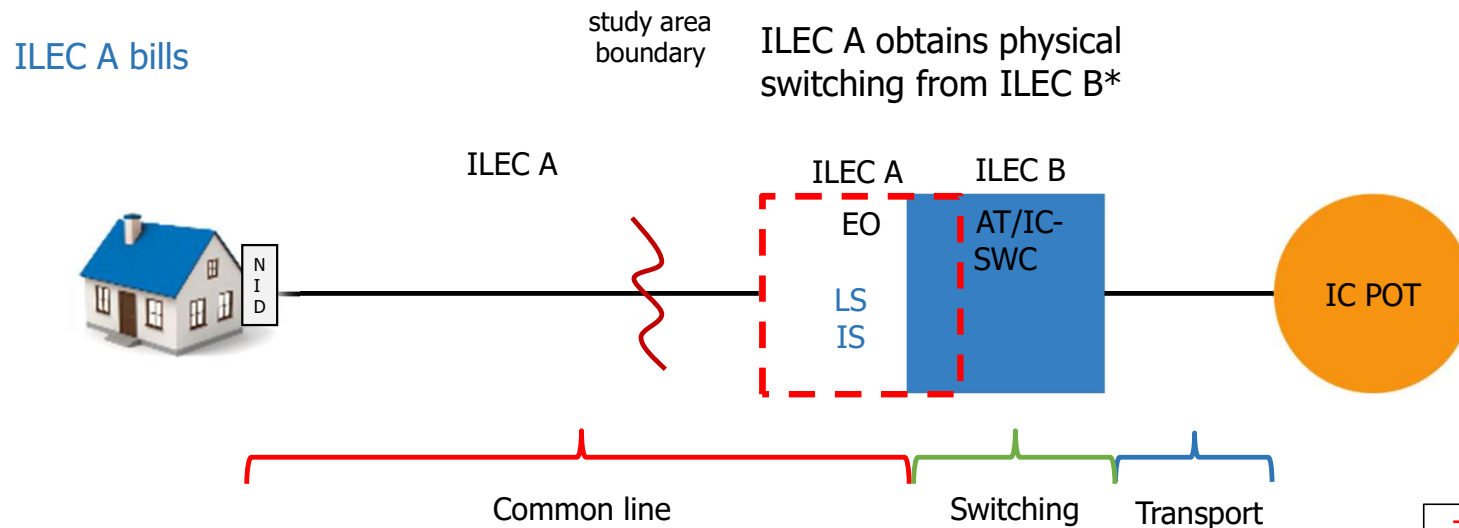


This is one example of a provisioning arrangement. Other arrangements are possible

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Option 1: Hosted switching

After hosted switching



*Study areas are not required to be adjacent but must be within the same LATA

This is one example of a provisioning arrangement. Other arrangements are possible

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Option 1: Hosted switching



Cost companies must review and update their categorization to reflect the current use for cost study and USF purposes (where required)

Reclassification of existing investment may require an adjustment to the ILEC's switched access eligible recovery to avoid double recovery



Switched access billing changes may be required with these reconfigurations

Switch reconfigurations may also trigger changes in special access billing, including DSL

- ✓ The ILEC may wish to consider establishing a special access only wire center in Tariff FCC No. 4 to facilitate the billing of non-DSL special access

Option 1: Hosted switching

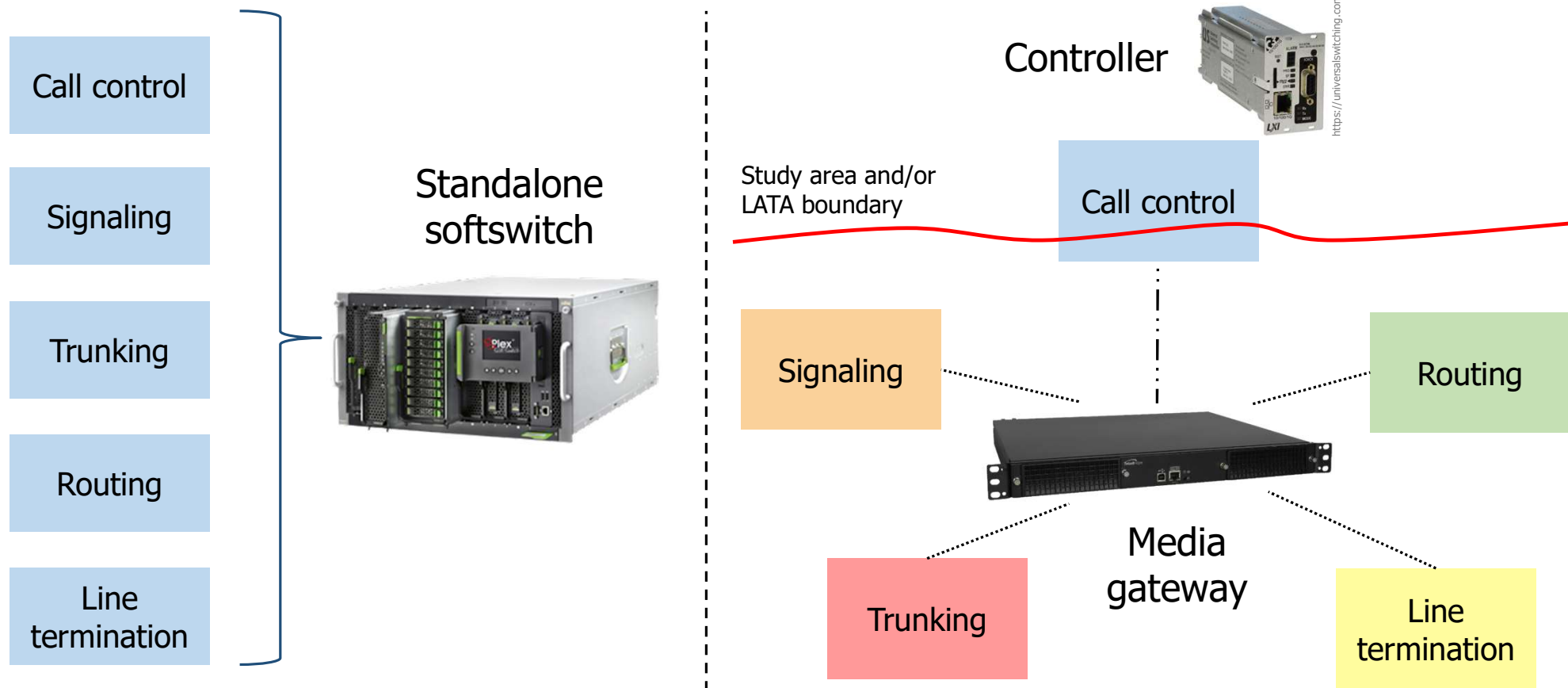
- NECA Tariff FCC No. 4 requirements
 - When all local switching is obtained from another entity, the ILEC obtaining switching will enter the CLLI code and associated V&H coordinates of the switch located outside its study area, **within the LATA**, using its own company code
 - The ILEC lists its NPA-NXXs and enters its own office type codes under the new SWC record
 - The ILEC must initiate and obtain concurrence for **new billing percentage routes** associated with the new switch under its company code

Option 1: Hosted switching

- **Advanced notification** to access customers and connecting carriers is required when an ILEC eliminates any existing switch, utilizes a new switch and/or modifies its tandem homing arrangements
- The ILEC must continue to meet all state and federal requirements of an incumbent local exchange carrier to participate in Tariff FCC No. 5, including
 - Use its network to offer services that meet the requirements of its certificate of public convenience and necessity
 - Be an eligible telecommunications carrier and provide voice telephony service in accordance with 47 CFR § 54.101 to receive federal universal service support
 - Have a local tariff on file with the state PUC (where required)

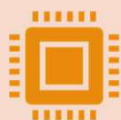
Option 2: Media gateway

Softswitch versus media gateway



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Option 2: Media gateway Controller functionality



A collocated media gateway or similar device can be combined with distant controller functionality to provision switching service

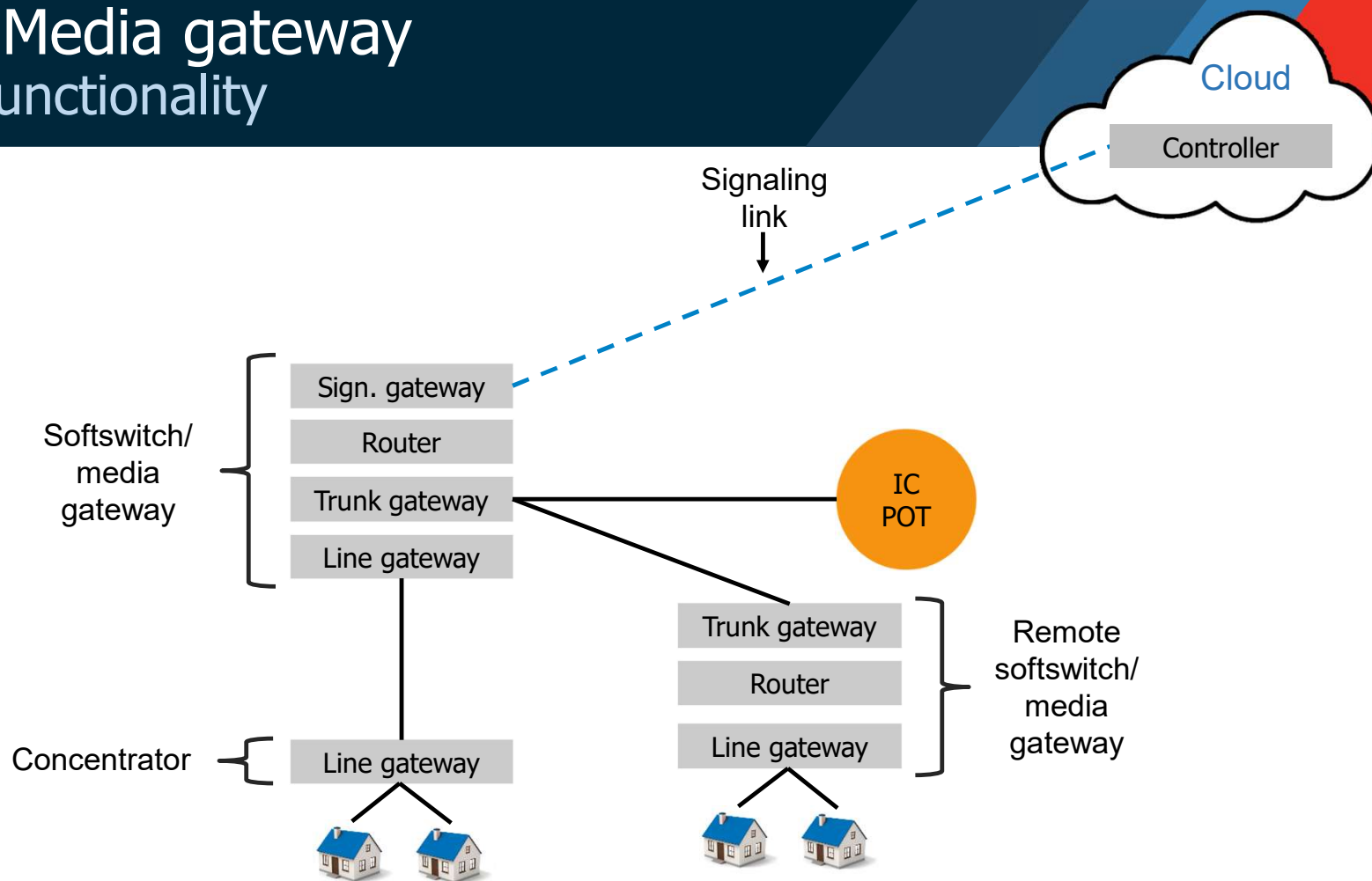
Line termination, trunk termination and routing functions must be physically collocated to properly interface with trunks and lines

Controller functionality is not required to be located within the same LATA



This arrangement must not affect call routing

Option 2: Media gateway Controller functionality



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Option 3: Interconnected VoIP

- Interconnected VoIP services are **nonregulated** and therefore treated differently than regulated local exchange voice services

IMPORTANT

CAF ICC payments from USAC may be affected when moving from regulated voice service to interconnected VoIP

Phone number porting, LERG changes and customer notification/authorization may be required

Section 214 service discontinuation provisions may apply if the ILEC reduces availability or ceases to offer regulated local exchange service

A variety of other interconnected VoIP requirements apply

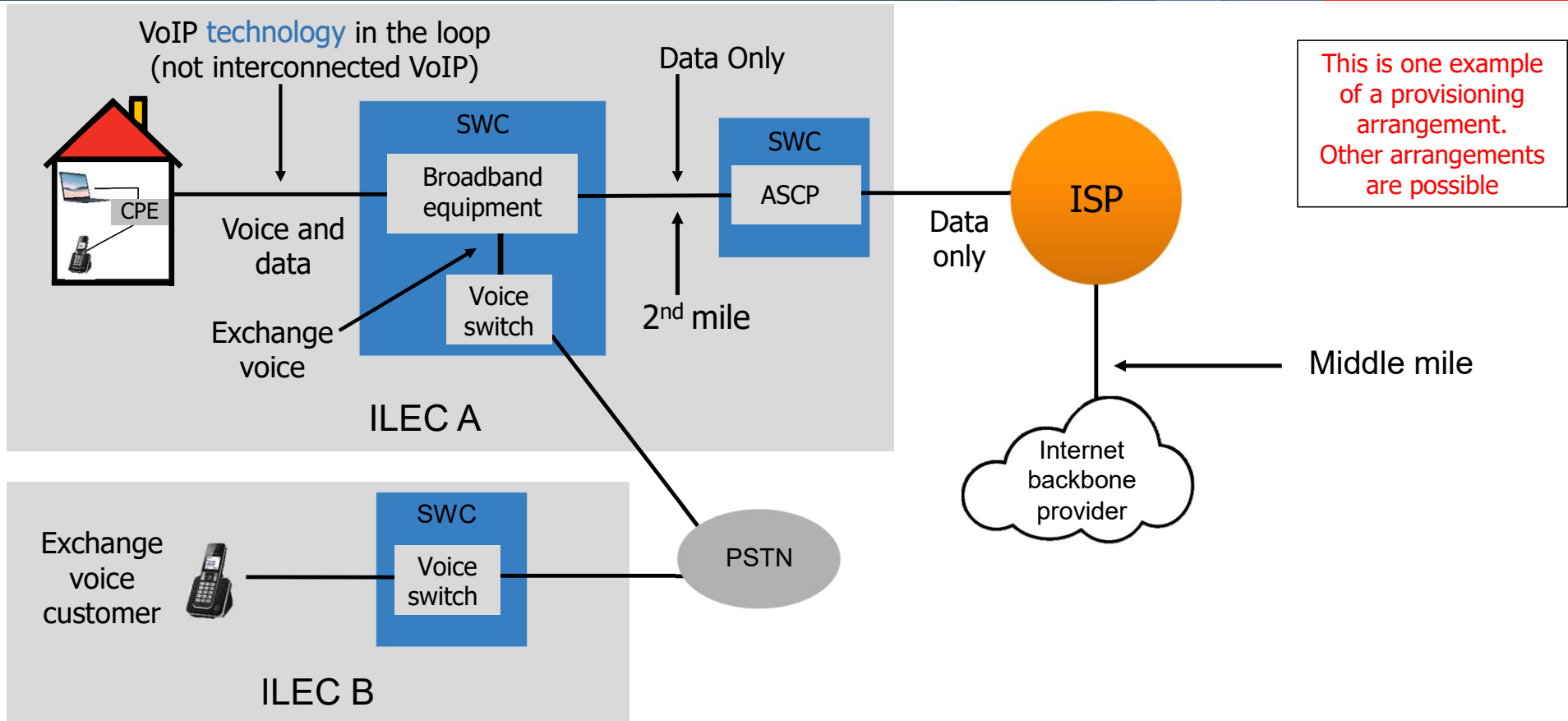
State regulatory requirements should also be considered

Option 3: Interconnected VoIP

- Subscriber line charges, access recovery charges and other switched access charges do not apply to interconnected VoIP services
- Nonregulated allocations
 - When the cloud switch is used solely to provision nonregulated interconnected VoIP, **associated lease expenses** are treated as nonregulated
 - When the loop is used solely to provision interconnected VoIP service (with no associated CBOL), **loop investment and costs** are treated as nonregulated
 - Loops with CBOL remain regulated if the CBOL service is offered under tariff or common carrier permissive detariffing
 - Optical network terminals used to provide both CPE and transport require a nonregulated allocation

Option 3: Interconnected VoIP

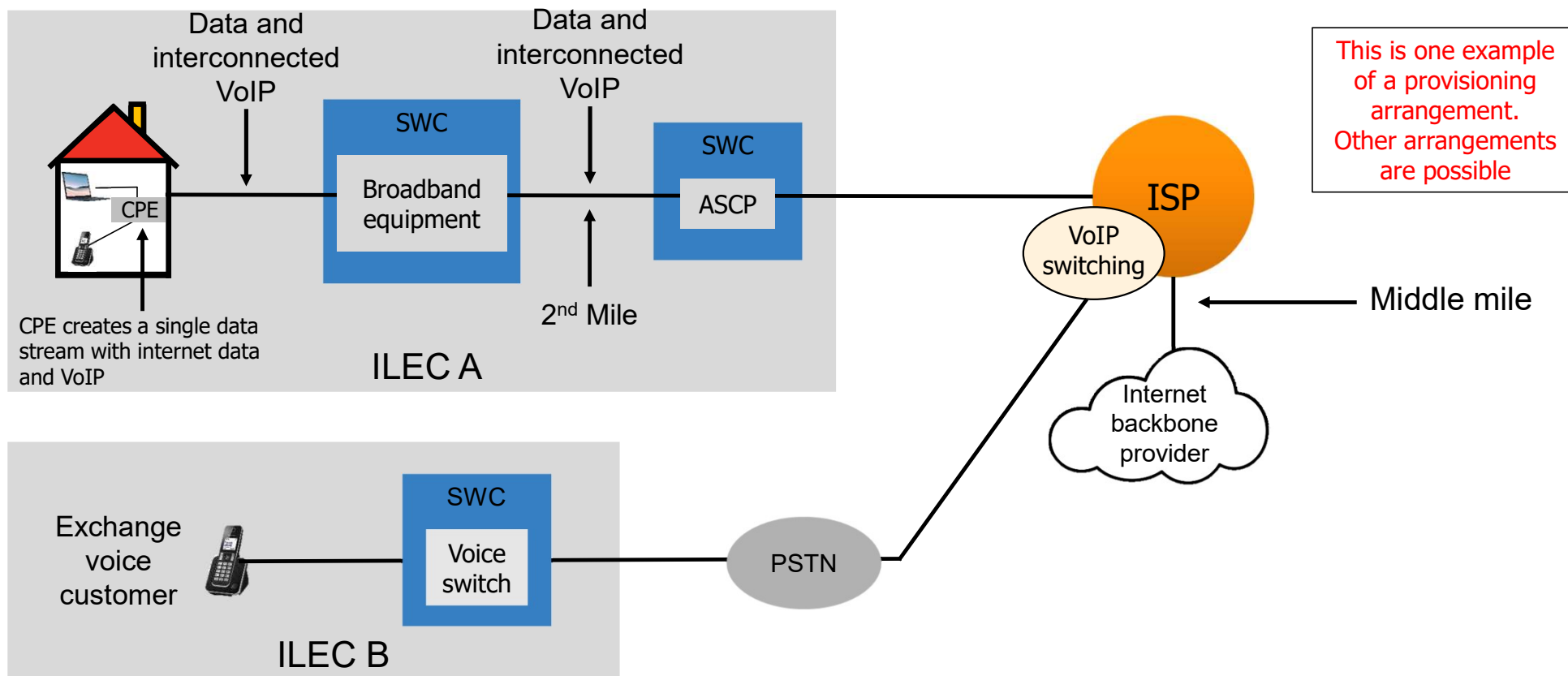
What is **not** interconnected VoIP



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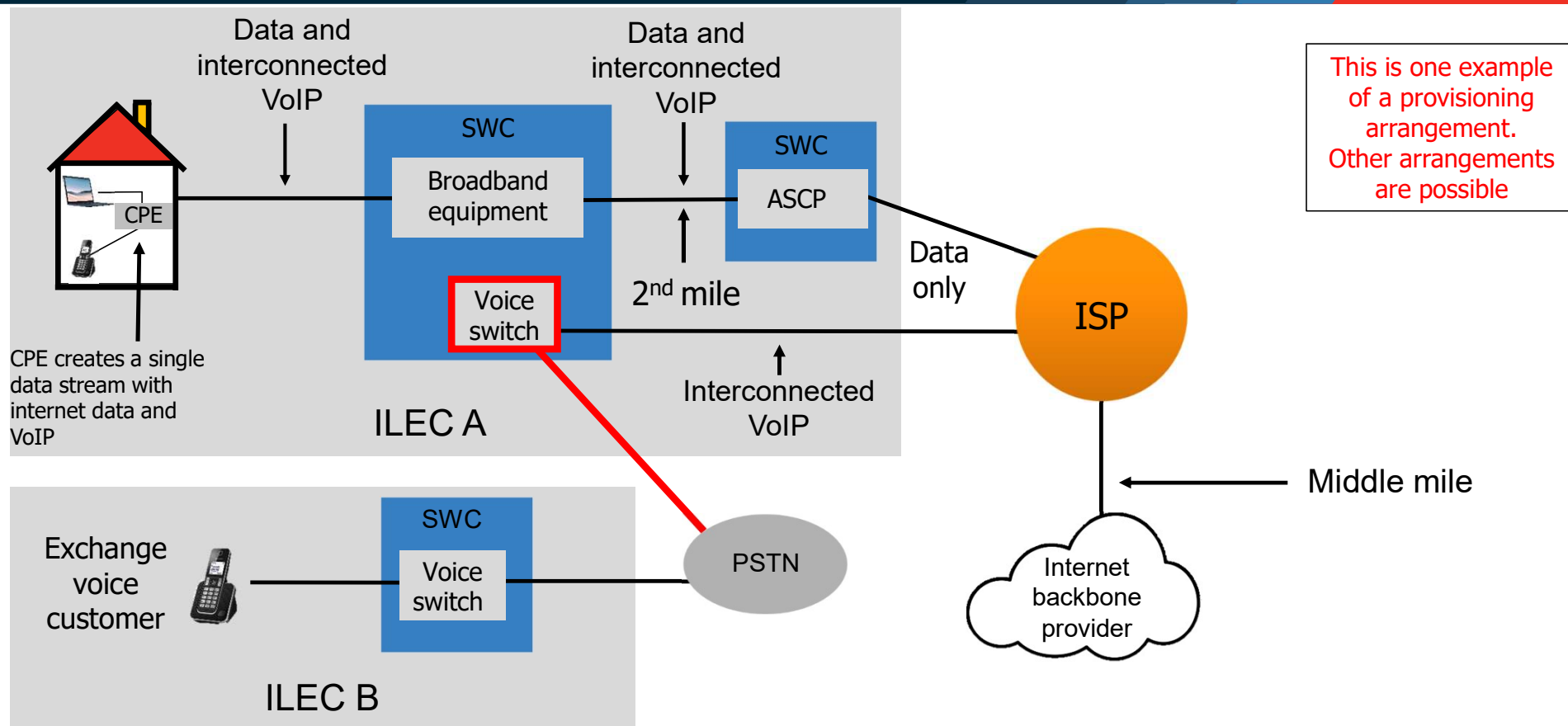
Option 3: Interconnected VoIP

Provisioning interconnected VoIP – example A



Option 3: Interconnected VoIP

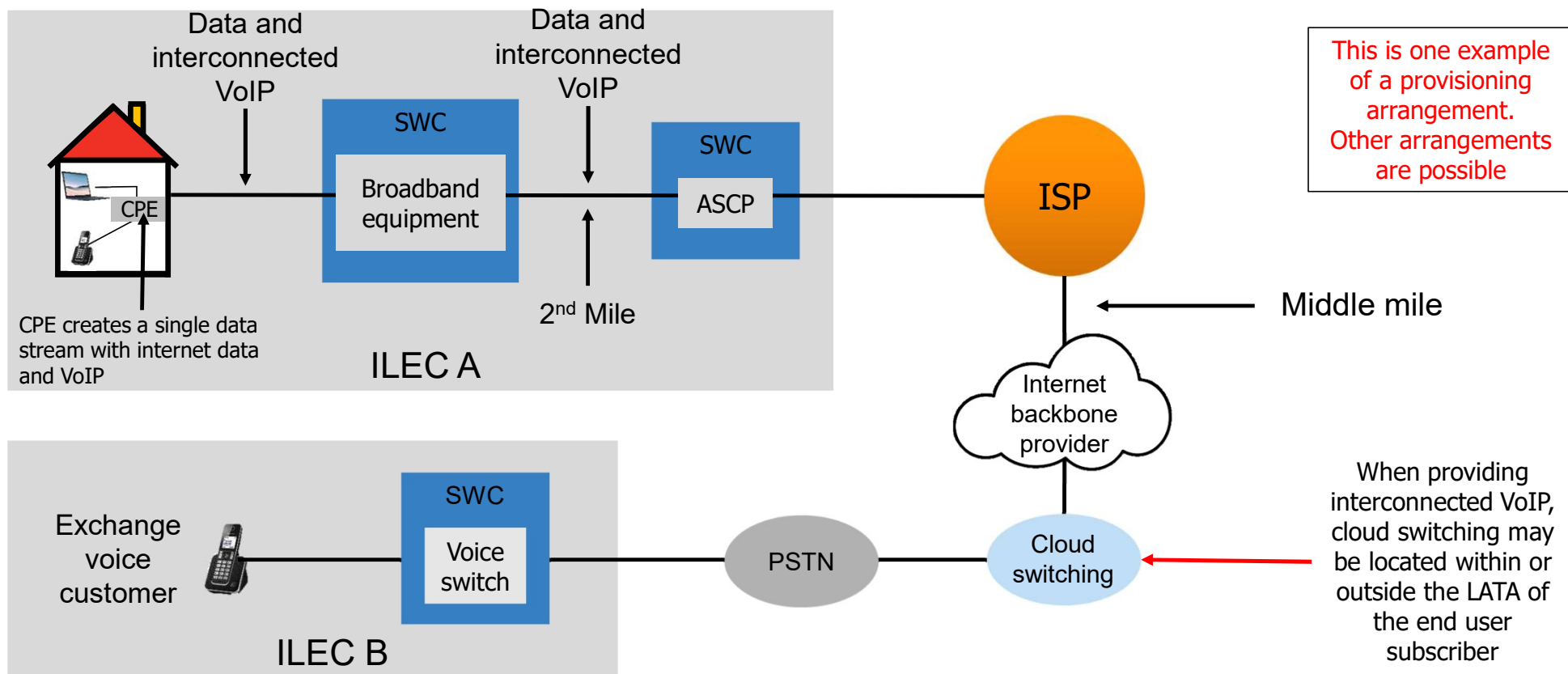
Provisioning interconnected VoIP – example B



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Option 3: Interconnected VoIP

Provisioning interconnected VoIP – example C



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Network reconfiguration considerations

Cost recovery implications

- How will the change impact cost and USF reporting?
 - Removal or reduction of switching investment requires recategorization of plant, which has implications for rate development and USF support
- How will the change impact revenue?
 - End user and access revenues
 - NECA pooling settlement
 - USF support
- Changes to switching will also impact special access and consumer broadband reporting and cost recovery

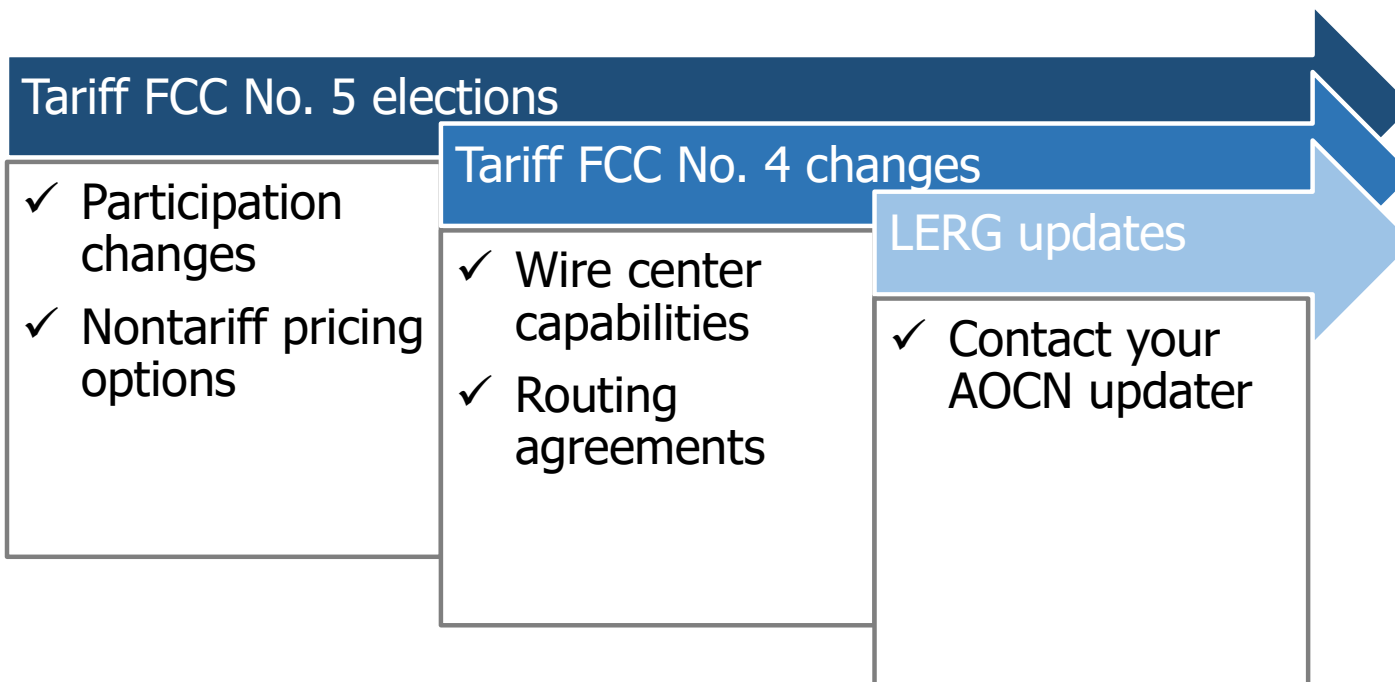
Network reconfiguration considerations

Notification requirements

- FCC
- State commission
- Customers – end users and carriers
- Connecting carriers
- NECA
- Consultants
- Vendors
- Others?

Network reconfiguration considerations

Potential tariff and database impacts



Network reconfiguration considerations

NECA resources

- [Reporting guidelines, papers and FAQs](#) are located on neca.org under Member Services menu (login required)
 - NRG 4.18 – apportionment of costs for nonregulated services
 - NRG 4.20 – integrated network interface device
 - NRG 4.22 – softswitch technology
 - NRG 8.11 – providing local exchange telephone service using VoIP technology
 - NRG 8.15 – switch consolidations
 - NRG 8.17 – CBOL for pooling and USF reporting
- [Network evolution papers and FAQs](#)

Thank you for participating today!



Acronyms

- ASCP Access Service Connection Point
- ARC Access Recovery Charge
- AT Access Tandem
- CAF ICC Connect America Fund Inter-carrier Compensation
- CBOL Consumer Broadband Only Line
- CDP Customer Designated Premises
- CFR Code of Federal Regulations
- CLLI Common Language Location Indicator
- CPE Customer Premise Equipment
- DSL Digital Subscriber Line
- DTF Direct Trunked Transport
- DTT Direct Trunked Termination

Acronyms

- FAQ Frequently Asked Questions
- FCC Federal Communications Commission
- IC Interexchange Carrier
- ILEC Incumbent Local Exchange Carrier
- INID Integrate Network Interface Device
- IP Internet Protocol
- IS Information Service
- ISP Internet Service Provider
- LATA Local Access and Transport Area
- LEC Local Exchange Carrier
- LERG Local Exchange Routing Guide
- LS Local Switching

Acronyms

- NECA National Exchange Carrier Association
- NPA-NXX Area code and exchange assignment
- NRG NECA Reporting Guideline
- ONT Optical Network Terminal
- POT Point of Termination
- PSTN Public Switched Telephone Network
- PUC Public Utility Commission
- Sign. Signaling
- SIP Session Initiation Protocol
- SLC Subscriber Line Charge
- SWC Serving Wire Center
- TSF Tandem Switched Facility

Acronyms

- TST Tandem Switched Transport
- USAC Universal Service Administrative Company
- USF Universal Service Fund
- V&H Vertical and Horizontal
- VoIP Voice over Internet Protocol