



SIP Forum STIR/SHAKEN Enterprise Summit Call Branding: An Enterprise Perspective

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Agenda

- Branded Calling Experience
- Origination Policy and Vetting
- Review Challenges and Concerns
- Three Most Desired Methods Branding Methods
- Enterprise Process Summary
- Current Industry Direction
- Key Take Aways

Branded Calling Experience

- Increase call answer rates
 - Increase call trust factor
 - Protect and increase brand equity
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- Delivering rich content to called party
 - Calling Name, Logo, and Call Reason
 - Securely send call information with STIR/SHAKEN



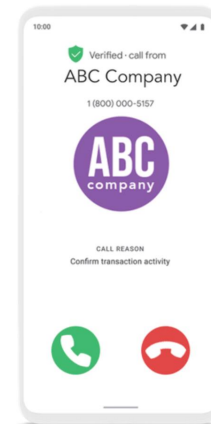
Branded Calling Display Options

- Enhanced Device

- Mobile device, enterprise desk phone, and UC/Collaboration platforms
- Name, logo, and call reason

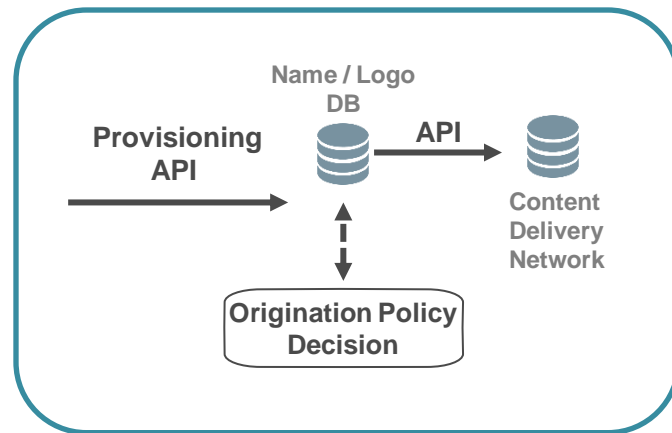
- Traditional Caller ID Device

- Enterprise desk phones, PSTN phones, and CID devices
- Limited by Calling Name display
- Name / Number Only



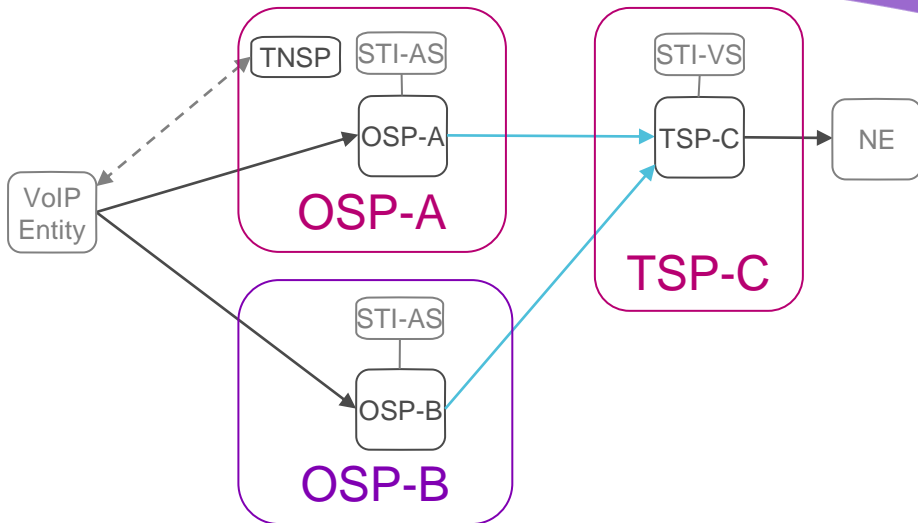
Origination Policy for Branding

- Vetting enterprise use of name and logo
 - Credit check, etc.
 - When
 - Service provisioning
 - TN allocation
- Storing logo for retrieval at called endpoint
- Policy based lookup during call origination
 - Apply name, logo URL, and call reason
 - Set attestation level for SHAKEN PASSporTs
- Policy Inputs
 - Ingress call association (e.g. trunk group)
 - Per organization identifiers (e.g. Enterprise ID)
 - Per-call signaled data



Enterprise Authentication Challenges

- OSP = TNSP and calls from trusted trunk
 - Enterprise brand easily verified
 - OSP has commercial relationship with enterprise
 - Option: OSP managed branding database
- OSP ≠ TNSP
 - Multiple outbound carriers / Separate TNSP
 - Toll-Free / Large enterprise
 - OSP did not issue the number
- Delegate to outbound call center
 - Many outbound carriers / Separate TNSP
 - Call center does not own brand or number



OSP – Originating Service Provider
TSP – Terminating Service Provider
TNSP – Telephone Number SP
VoIP Entity - Enterprise

Implementation Concerns

- Fraud
 - 7000+ carriers registered in US Robocalling Mitigation Database
 - Originating carriers implicated in some telecom fraud
 - There will be abuses; need to predict, means to detect, and means to react
 - FCC enforcement actions to mitigate
- Terminating Service Provider Trust of Call Branding Source
 - Terminating service providers will be reluctant to display signaled data
 - Protect their customers
 - May encourage more over the top fragmentation
 - Push to national database (e.g. CTIA)
 - How can TSP be certain of policies used to vet call branding at OSP?
 - Delegate certificates require multi-level trust hierarchy

Poll Question #1

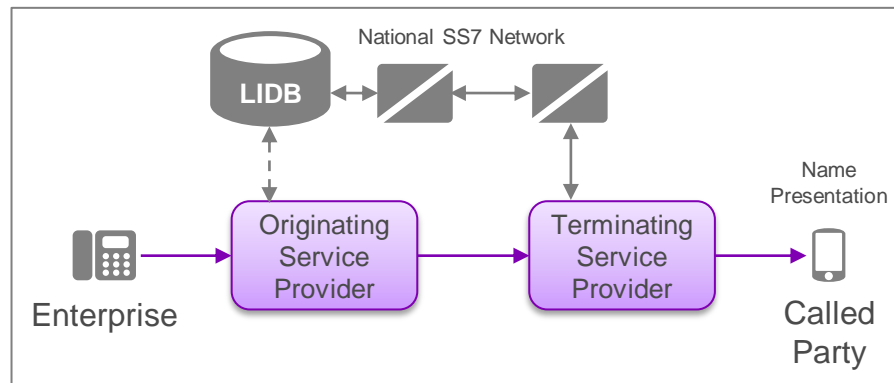
Enterprises: Who have you engaged for instruction or guidance on Branded Calling capabilities?

- Telephone Number Service Provider
- Originating Service Provider
- Over-the-Top Provider
- Other
- Not yet engaged

Challenges With Existing CNAM

- CNAM easily spoofed
 - Not all calls are signed
 - TDM switches trigger CNAM irrespective of STIR/SHAKEN authentication
- Data quality issues
 - Terminating provider determines quality of data
 - Originating service provider has no control over called party experience
 - Enterprise only has relationship with originating service provider
 - Called party experience varies based on called party service provider
- *Need to trust name on **all** devices and terminating networks*

CNAM - circa 1993



- OSP collection and vetting name during service ordering
- OSP stores name in own LIDB or CNAM database
- TSP uses SS7 and calling number Global Title routing to query OSP database

Challenges With Over-the-Top Branding

- Private companies with phone apps
 - Enterprise registers with app provider
 - Enterprise may need to notify every intent to call (eg. Google Verified Calls)
 - Called party must install OTT provider specific application
- Enterprise concerns
 - Must register with many OTT vendors
 - Can't know which OTT app is on the called party device
 - Consumer experience will vary; some users will not have any OTT application
 - Must sign up with multiple OTTs to increase odds
 - Vendor lock-in
 - Potential for conflicting information presented on called party device
 - Carrier supplied RCD or CNAM from native dialer
 - OTT application popup
 - Crowdsourcing can be punitive
 - Consumers make knee jerk reactions to calls
- No mechanism available deliver name on wireline PSTN devices

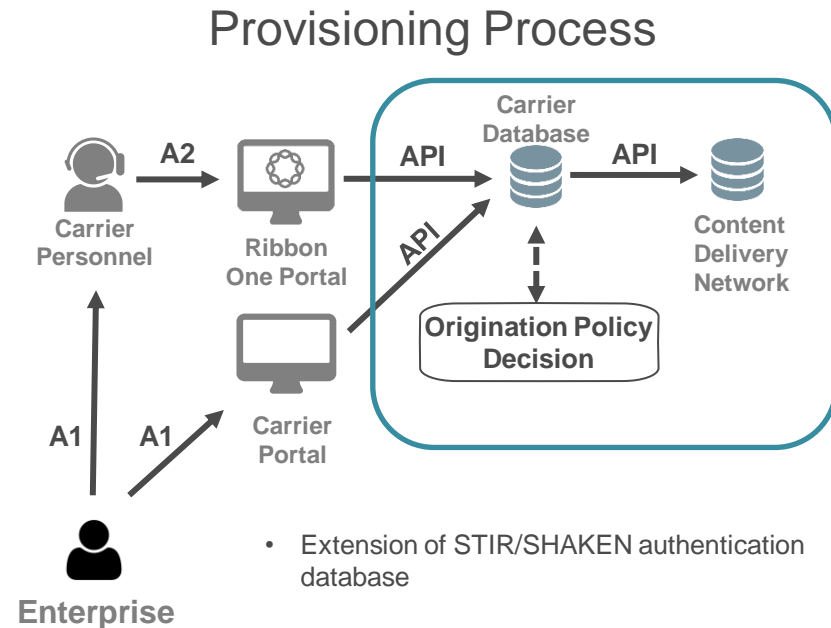
Three Most Desired Branding Methods

- Originating Service Provider (OSP) Managed Database
- CTIA Registered Caller National Database
- Enterprise Delegate Certificates

- Most desired because in all three:
 - Originator controls brand content displayed to *all* called parties

Branded Calling Value: OSP Managed Database

- OSP maintains commercial relationship with enterprise
 - Vets enterprise for commercial service
 - Vets enterprise name and logo
- Great option for OSP originated calls
 - OSP Customer Care
 - OSP hosted call centers
- Great option for mid-sized enterprises
 - Especially for enterprises where OSP = TNSP
 - No complexity for enterprise
 - Letter Of Authorization process when OSP and TNSP are different

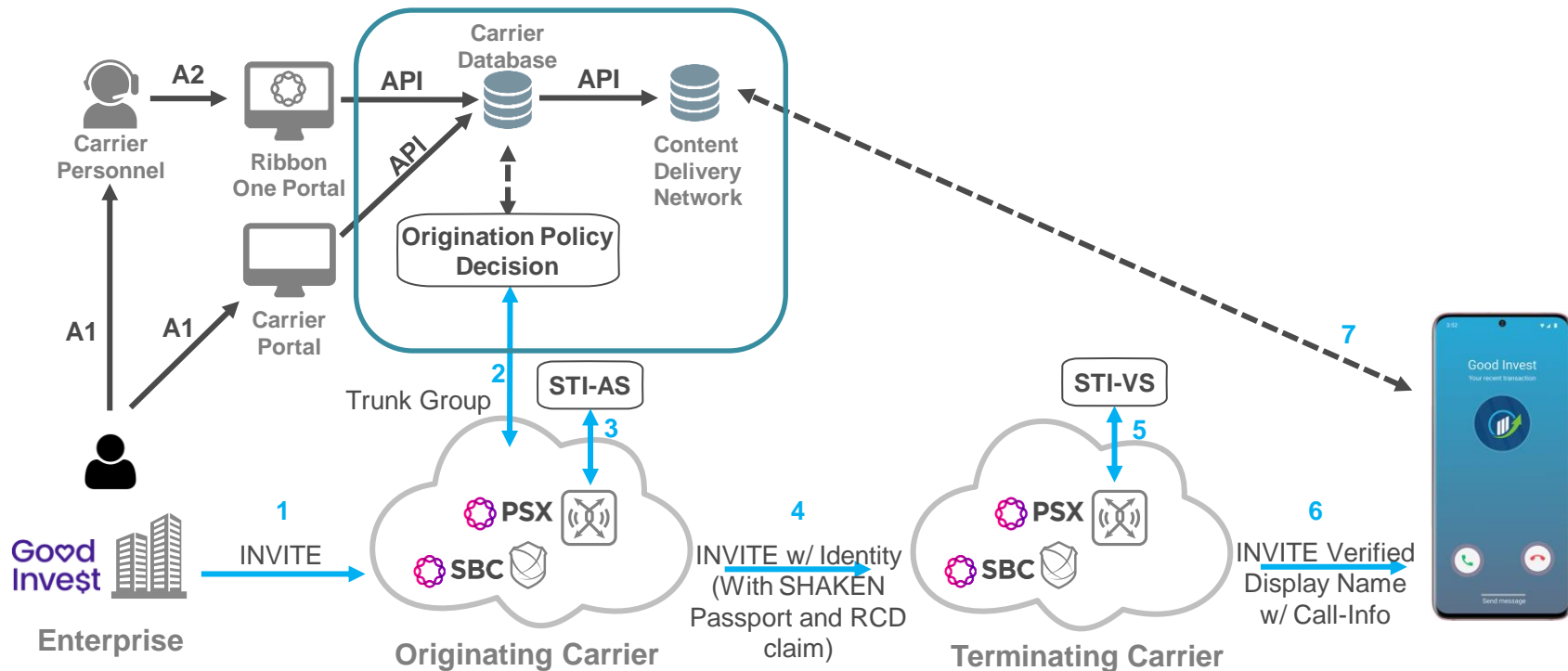


Branded Calling Implementation: OSP Managed Database

- **Originating Service Provider (OSP): Vets Enterprise**
 - Manages commercial relationship with enterprise
 - Stores enterprise brand data in OSP managed content delivery network (CDN)
 - Applies enterprise's brand for enterprise originated calls
- **Enterprise (VoIP Entity): Business as Usual**
 - Initiates calls using existing SIP methods
 - Could also be TDM initiated (PRI, etc.)
 - No addition software or 3rd party services
- **Multi-carrier Enterprises**
 - Require manual letter of authorization from TNSP
 - Slow, manual updates



Branded Calling Implementation: OSP Managed Database



Branded Calling Value: CTIA Registered Caller National Database

- Enterprise

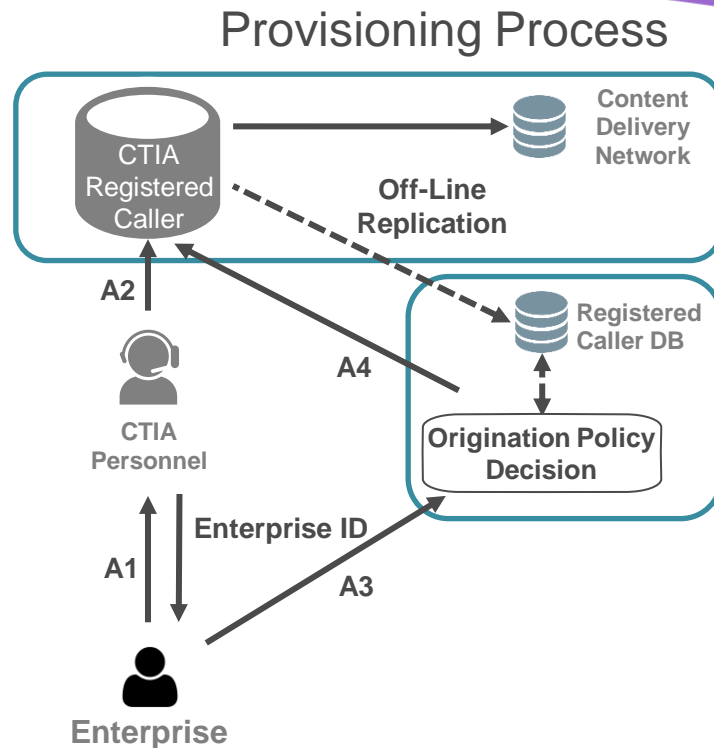
- Useful for larger enterprises who have multiple OSP relationships
- Privacy concerns over visibility of data
- Commercial relationship with CTIA

- CTIA National Database Owner

- Database operator maintains commercial relationship
- Vets enterprise name and logo

- Originating Service Provider

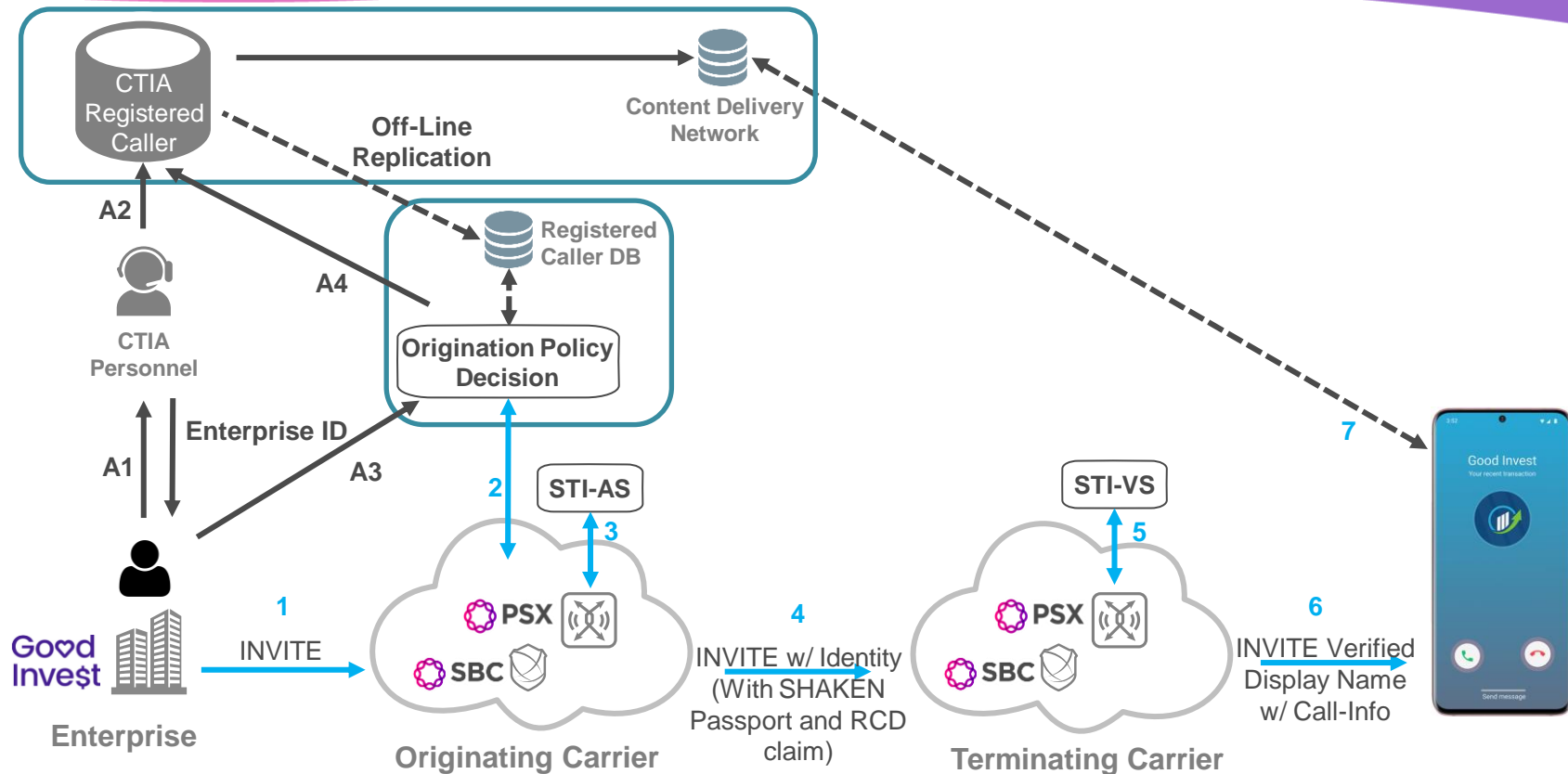
- Must maintain replicated mirror of national database (like LNP or Toll-Free)



Branded Calling Implementation: CTIA Registered Caller

- CTIA Registered Caller: Vets Enterprise
 - Manages commercial relationship with Enterprise
 - Stores branding data in content delivery network (CDN)
 - Distributes TNs, names, and CDN URLs to all OSPs along with enterprise ID
- Enterprise (VoIP Entity)
 - Initiates calls using existing SIP methods. Could also be TDM initiated (PRI, etc.)
- Originating Service Provider (OSP)
 - Vets enterprise during service establishment and vets enterprise ID
 - Replicates national database for call-by-call lookup
 - Verify and attest 'A' with OSP SHAKEN Identity
 - Applies enterprise's branding for calls enterprise originates

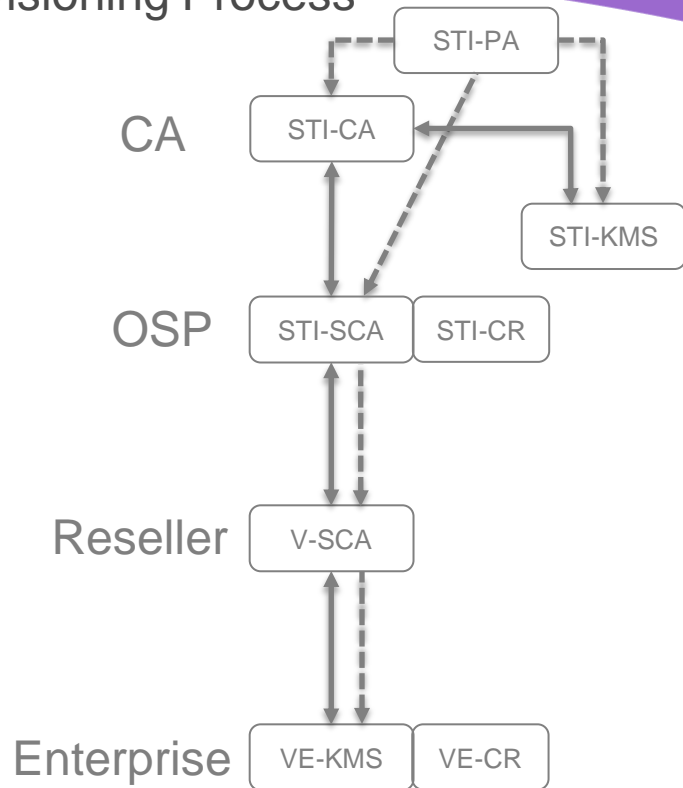
Branded Calling Implementation: CTIA Registered Caller



Branded Calling Value: Enterprise Delegate Certificates

- Enterprise
 - Enterprise maintains control of branding experience
 - Perfect for larger enterprises who have multiple OSP relationships
- Telephone Number Service Provider
 - Telephone Number Service Provider (TNSP) maintains enterprise commercial relationship
 - Maintain subordinate CA infrastructure (or outsource to aaS provider)
- Originating Service Provider
 - Verify and attest 'A' with OSP SHAKEN Identity

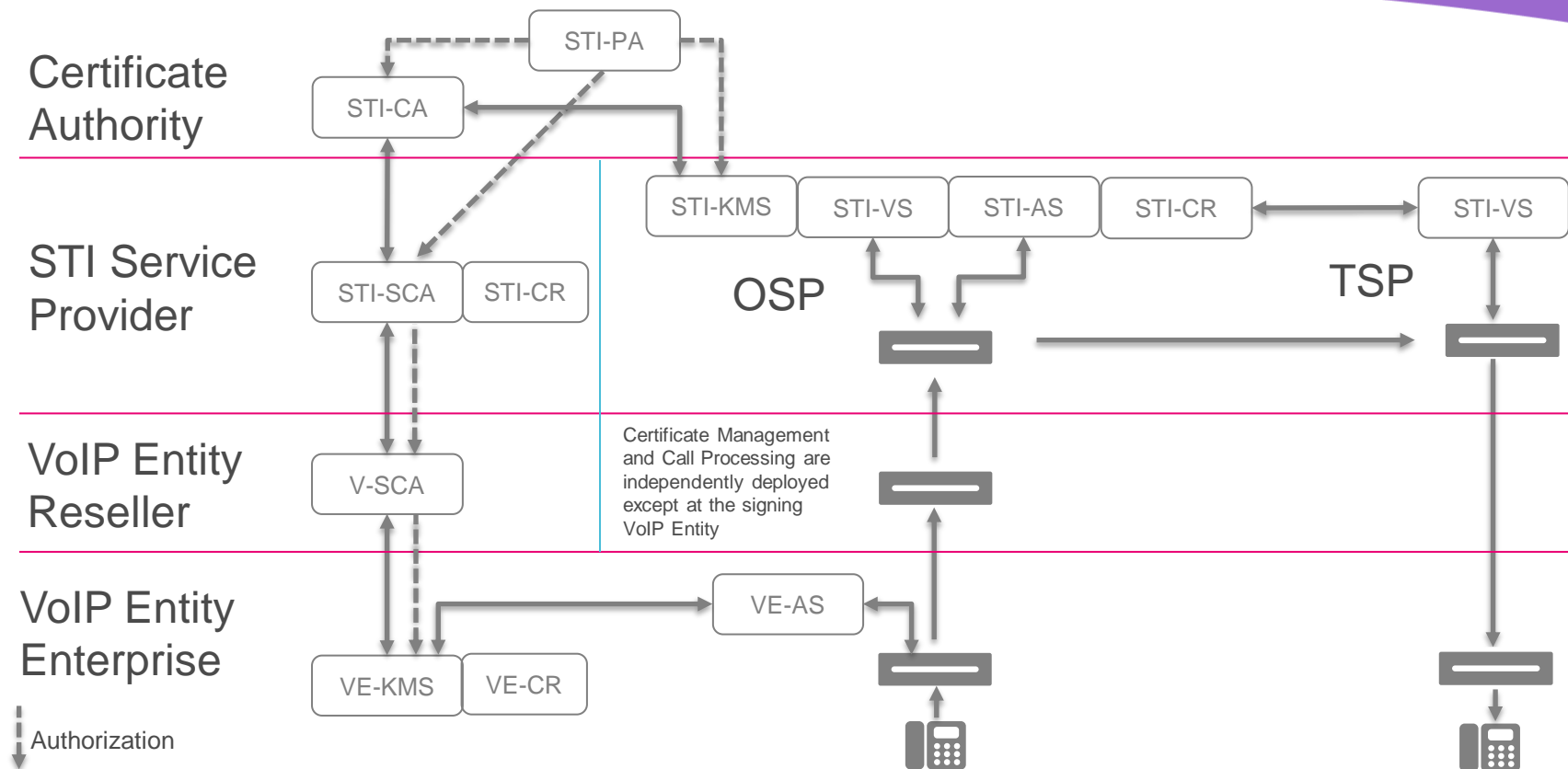
Provisioning Process



Branded Calling Implementation: Enterprise Delegate Certificates

- Telephone Number Service Provider (TNSP): Vets Enterprise
 - Manages commercial relationship with enterprise
 - Stores branding data in content delivery network (CDN)
 - Issues delegate certificate to enterprise
- Enterprise (VoIP Entity)
 - Applies branding for calls that the enterprise originates
 - Signs originations using private key for delegated certificate
- Originating Service Provider (OSP)
 - Verifies delegate certificate
 - Uses delegation success to attest for SHAKEN identity

Branded Calling Implementation: Enterprise Delegate Certificates



Enterprise Process Summary

- OSP Database
 - Account creation with OSP and vetting
 - Register name and logo with OSP
- CTIA Solution
 - Account creation with CTIA and vetting
 - Register name and logo with CTIA
 - Account creation with each OSP and vetting
- Delegate Certs
 - Account creation with TNSP and vetting
 - Register name and logo with TNSP
 - Account creation with each OSP and vetting
 - Signing of calls using delegate certificate
- Common to All Three
- Additional steps with multiple OSPs

Poll Question #2

Enterprises: Which branding method do you think best meets your needs?

- OSP Managed Database
- CTIA National Database
- Delegate Certificates
- Over-the-Top provider
- Undecided

Current Industry Direction

- **Fragmented Databases**
 - Multiple closed ecosystems evolving
 - No guarantee called party will see intended branding
 - Unlikely for terminating provider to check multiple databases
 - Same fate as CNAM
- **Push Toward CTIA National Database**
 - Driven by carriers in CTIA trade association
- **Carriers Need Focus**
 - Enterprises would do well to organize and influence carriers

Key Take Aways

- Enterprise discussions with OSPs are important
- Will be multiple means to vet data
 - Should not require an enterprise to engage multiple, many vetting entities
- OSP plays pivotal role as they own the originating enterprise relationship
- TSP will only pass on data they believe is legitimate

Thank You

