Call Authentication for Non-IP Networks – TRACED Act Compliance Webinar

Moderator:

- Steve Barclay, Senior Director Global Standards Development, ATIS

Panelists:

- Tom Goode, General Counsel, ATIS
- Philip Linse, Director Public Policy, CenturyLink and Chair, Non-IP Call Authentication Task Force
- Jim McEachern, Principal Technologist, ATIS

June 17, 2020

Agenda

- **Agenda; ATIS Overview**
  - Steve Barclay, ATIS
- **TRACED Act**
  - Tom Goode, ATIS
- **Introduction to ATIS PTSC Non-IP Call Authentication Task Force (NIPCA TF)**
  - Philip Linse, CenturyLink & PTSC NIPCA TF Chair
- **ATIS PTSC NIPCA TF Work Program**
  - Jim McEachern, ATIS
- **Questions & Answers**
  - Steve Barclay, ATIS

About ATIS

- Broad ecosystem of members addressing the information and communications technology (ICT) industry's top challenges.
- Strategic initiatives and solutions/standards work progresses new business opportunities, solves common industry challenges, and creates a platform for collaboration with other industries.
- Accredited by the American National Standards Institute (ANSI).
- North American Organizational Partner (OP) for the 3rd Generation Partnership Project (3GPP).
  - Provides coordination among 3GPP members to represent regional needs.

ATIS Committees, Initiatives and Partnerships

ATIS Board Strategic Initiatives
Innovation Agenda

- 5G
- Connected Car - Cybersecurity
- Context-Aware Identity Management
- Cybersecurity
- Distributed Ledger Technology
- Evolution to Content Optimized Networks
- Future Network Enabled Marketplace
- Multi-Network Enterprise Solutions
- Network-Enabled Artificial Intelligence
- Smart Cities
- Unmanned Aerial Vehicles

Technology and Operations Council

- 5G Verticals Enablement Platforms
- Robocalling and Communication ID Spoofing
- 5G North American Needs Focus Group
- IoT Categorization Focus Group
- Open Source IoT
- VNF KPIs for Optimal Cloud Performance

Technical and Operations Committees

- Automatic Identification & Data Capture Committee
- Emergency Services Interconnection Forum
- Industry Numbering Committee
- International Mobile Subscriber Identity (IMSI) Oversight Council
- Network Reliability Steering Committee
- Next Generation Interconnection Interoperability Forum
- Ordering and Billing Forum
- Packet Technologies and Systems Committee
- SMS/800 Number Administration Committee
- Sustainability in Telecom: Energy and Protection Committee
- Synchronization Committee
- Telecom Management and Operations Committee
- Wireless Technologies and Systems Committee

Special Initiatives

- DNS Privacy, Security & Services
- 5G Supply Chain Working Group
- Non-Terrestrial Networks
- Secure Telephone Identity Governance Authority
- Hearing Aid Compatibility Task Force
- ATIS/SIP Forum IP-NNI Joint Task Force
- Location Accuracy Test Bed

International Partnerships

- 3GPP
- oneM2M
  - ATIS Application-ID Registry

Pallone-Thune Telephone Robocall Abuse Criminal Enforcement and Deterrence Act

Tom Goode

ATIS

June 17, 2020

Introduction

- The Pallone-Thune Telephone Robocall Abuse Criminal Enforcement and Deterrence Act (TRACED Act) was enacted December 30, 2019, to deter unlawful robocalls and enhance enforcement capabilities.
- This presentation provides an overview of the provisions of this Act that may be relevant to the work of the ATIS PTSC NIPCA TF, including the timelines established for the implementation of call authentication frameworks in IP and non-IP Networks.

Call Authentication Timeline

- The TRACED Act requires the FCC to require providers of voice services within 18 months to:
  - Implement the STIR/SHAKEN authentication framework in the internet protocol networks of the provider of voice service; and
  - Take reasonable measures to implement an effective call authentication framework in the provider's non-internet protocol networks.

Call Authentication Timeline (cont'd)

- This mandate would not be implemented if the FCC finds that there is voluntary action by the industry.
  - For IP networks, this means that the voice service provider:
    - Has adopted the STIR/SHAKEN authentication framework for calls on its IP network;
    - Has agreed voluntarily to participate with other providers of voice service in the STIR/SHAKEN authentication framework;
    - Has begun to implement STIR/SHAKEN; and
    - Will be capable of fully implementing STIR/SHAKEN within 18 months.
  - For non-IP networks, this means that a voice service provider:
    - Has taken reasonable measures to implement an effective call authentication framework; and
    - Will be capable of fully implementing an effective call authentication framework within 18 months.

Evaluation of Burdens

- Within 12 months (and as appropriate thereafter), the FCC must assess burdens and barriers to call authentication, including:
  - The extent to which voice providers' networks use time-division multiplexing;
  - The impact on small providers and those in rural areas; and
  - Any issues related to unavailability of, or carriers' inability to purchase or upgrade, equipment to support the call authentication frameworks;
- An extension of the 18-month implementation deadline is available for undue hardship for a provider, class of providers, or type of voice calls, as necessary to address burdens/barriers.
- Even if an extension of the deadline is granted, requires FCC to require carriers to take reasonable steps to prevent illegal robocalls from originating on their networks.

Implementation of Call Authentication Frameworks

- The TRACED Act also requires the FCC to submit a report to Congress on the implementation of call authentication frameworks not later than 12 months. This report must:
  - Analyze the extent to which providers of voice service have implemented the call authentication frameworks, including whether the availability of necessary equipment and equipment upgrades has impacted such implementation; and
  - Assess the efficacy of the call authentication frameworks in addressing all aspects of call authentication.
- Also within 12 months, the FCC is required to issue best practices that providers may use as part of the implementation of effective call authentication frameworks to take steps to ensure the calling party is accurately identified.

Other Issues

- **Safe Harbor**. Within one year, the FCC must issue rules to provide guidance on when a provider may block a voice call based, in whole or in part, on information provided by call authentication frameworks.
- **Traceback**. The TRACED Act requires the FCC to establish a process for the registration of a single traceback consortium and to solicit potential candidates.
- **Enforcement**. The TRACED Act also includes a number of provisions aimed at enhancing enforcement (extending Telephone Consumer Protection Act (TCPA) statute of limitations, creating Interagency Task Force, streamlining voluntary reporting of violations, etc.)
- **Access to and Use of Telephone Numbers**. The FCC must determine how its policies regarding access to number resources, including toll-free numbers, could be modified to help reduce access to numbers by potential perpetrators of TCPA violations.

Conclusion

- The TRACED Act highlights the need for the industry to consider non-IP call authentication.
- The FCC is aware and informally has expressed support for this new task force.
- There will be a need to keep the FCC informed of task force developments; periodic updates will be prepared by ATIS for task force review and approval.

PTSC Non-IP Call Authentication Task Force

Philip Linse

CenturyLink

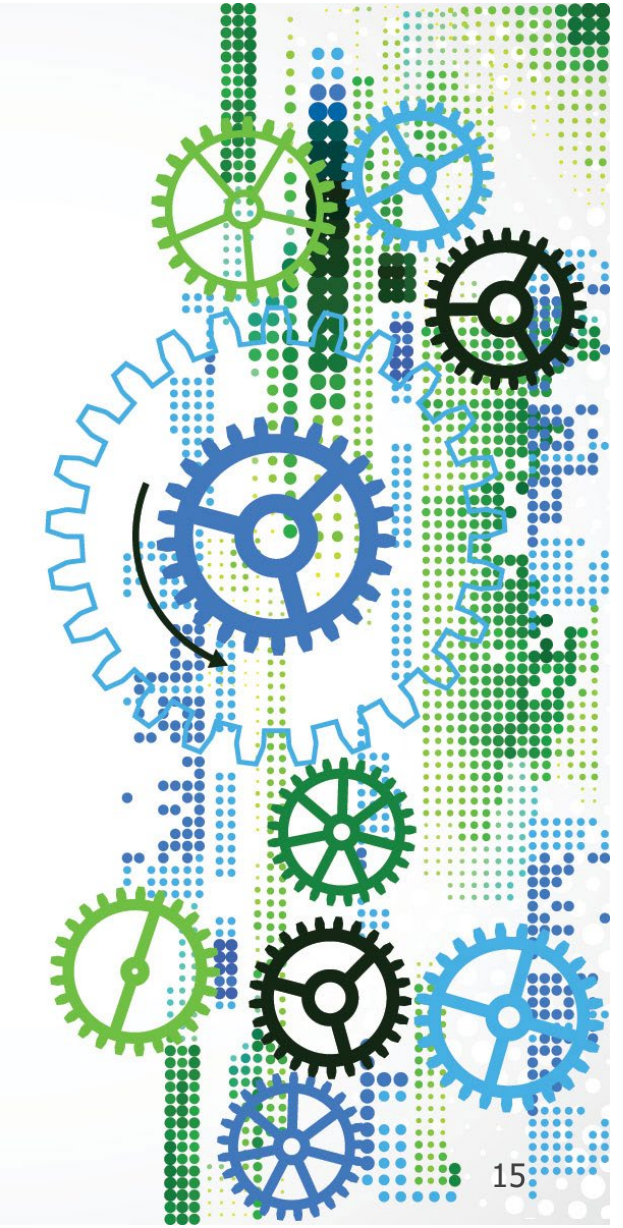
June 17, 2020

ATIS PTSC Expertise

- ATIS has been at the forefront of call authentication initiatives through the joint ATIS/SIP Forum IP-NNI Task Force.
- ATIS has proven expertise understanding emerging technologies and applying these technologies to real-world challenges.
- ATIS PTSC brings critical expertise to this initiative:
  - Expertise in call authentication standards for IP networks
  - A deep understanding of TDM network standards
  - An ability to apply call authentication to non-IP (i.e., TDM) networks

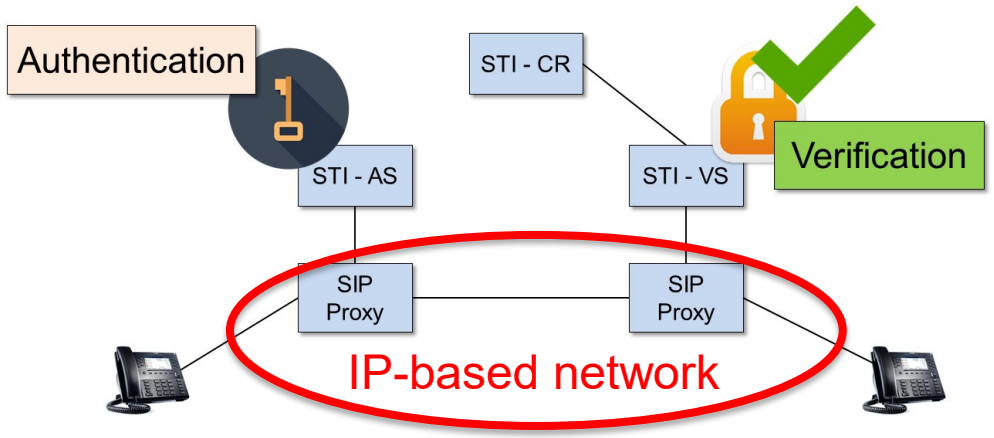
Non-IP Call Authentication Task Force (NIPCA TF)

- The NIPCA TF held its inaugural meeting on June 1, 2020.
- Next meeting is scheduled for Friday, June 19, 2020.
- Strong technical program with contributions already submitted for five deliverables.
  - Overview of problem space
  - Four call authentication mechanisms
- Participation is open to non-ATIS members: https://forms.atis.org/non-ip-call-authentication-task-force/



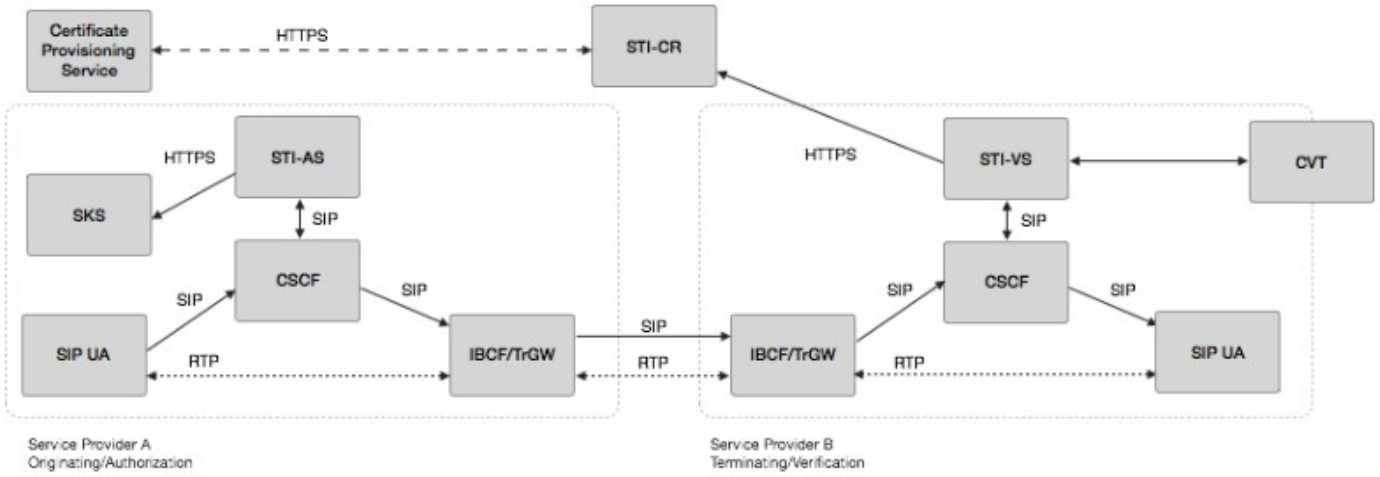
Charter

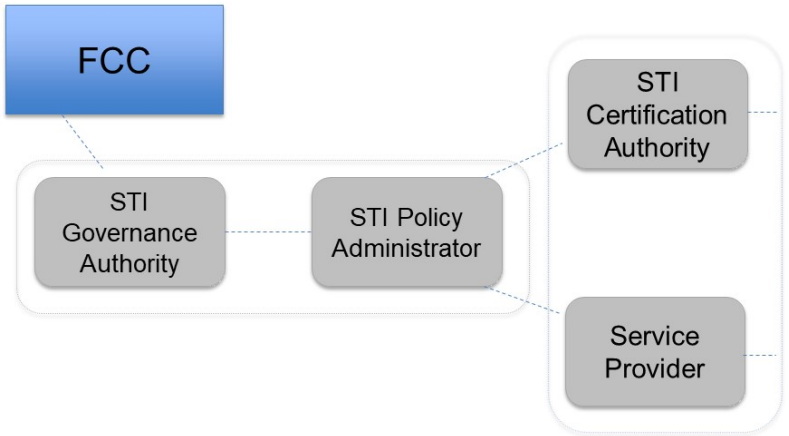
- NIPCA TF is focused on call authentication for TDM-based Service Providers.
- The task force will complement the work already being addressed in the joint ATIS/SIP Forum IP-NNI Task Force.
- The task force will identify and document call authentication challenges facing TDM networks.
  - Signature-Based Handling of Asserted Information Using Tokens (SHAKEN) is based on IP networks
  - Study TDM challenges
  - First step: Understand the problem



Charter (cont'd)

- Second Step: Education.
  - Many TDM experts are not call authentication experts
  - Leverage ATIS' expertise to ensure entire group understands the SHAKEN architecture and governance model to facilitate consideration of complementary approaches for TDM



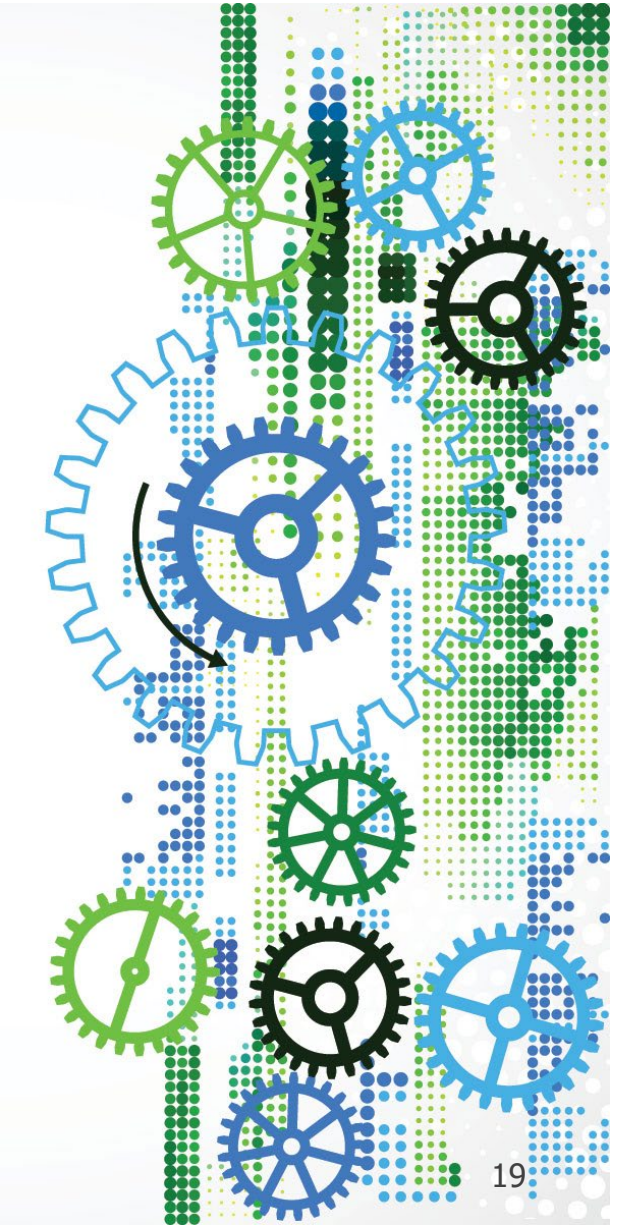


Charter (cont'd)

- Third Step: Analysis.
  - Investigate the feasibility of TDM call authentication frameworks, including how these would interwork with SHAKEN
  - Advance call authentication issues for TDM networks
    - Develop consensus-based positions relevant to work underway in the IP-NNI TF

Charter (cont'd)

- Fourth Step: Feasibility.
  - Evaluate the viability of implementing proposed call authentication mechanisms for TDM networks
  - Analysis is intended to understand the network implications of deployment
- Future work:
  - Develop, if appropriate, best practices for call authentication in TDM networks



NIPCA TF vs. IP-NNI TF

- NIPCA TF and IP-NNI Task Force have complementary mandates:
  - IP-NNI TF is the prime for SHAKEN, including:
    - Extensions to the SHAKEN framework
    - Interactions with other call authentication technologies
    - Explicit focus on IP-based networks
  - NIPCA TF is the prime for all aspects of call authentication in non-IP (i.e., TDM) networks:
    - Identify alternatives
    - Evaluate deployment viability
    - Standards/Best Practices development

Timeline

Dec 2019
TRACED Act passed

June 2020
ATIS launches Non-IP Call Authentication TF

3Q/4Q 2020
Investigate TDM Call Authentication mechanisms

2Q 2021
Readout to FCC

March 2020
FCC Order and FNPRM

3Q 2020
Framework TR

1Q 2021
Evaluate implementation viability

PTSC NIPCA TF Work Program

Jim McEachern

ATIS

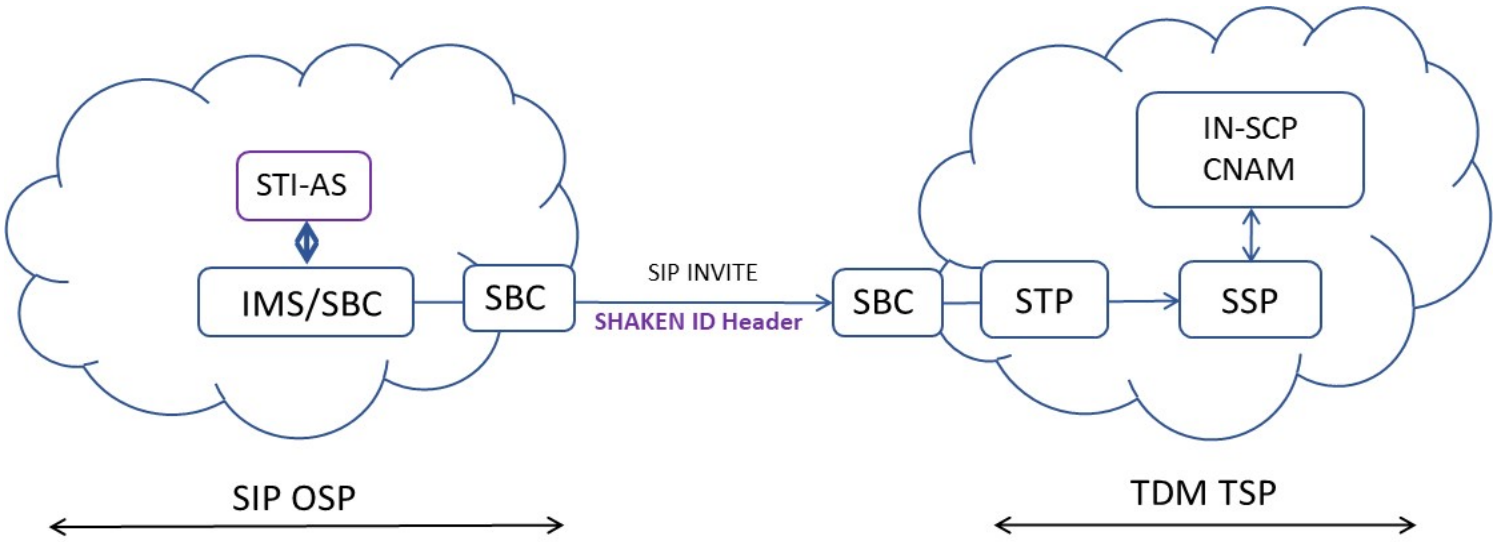
June 17, 2020

NIPCA TF Technical Contributions

- The NIPCA TF already has a robust technical program.
- Non-IP Call Authentication landscape:
  - Technical Report on Alternatives for Caller Authentication for Non-IP Traffic
- Call Authentication Frameworks for TDM networks.
  - TDM-SHAKEN
  - Initial Call Validation Mechanism
  - Out-of-Band Token Transmission for TDM
  - Extending STIR/SHAKEN over TDM Interconnects

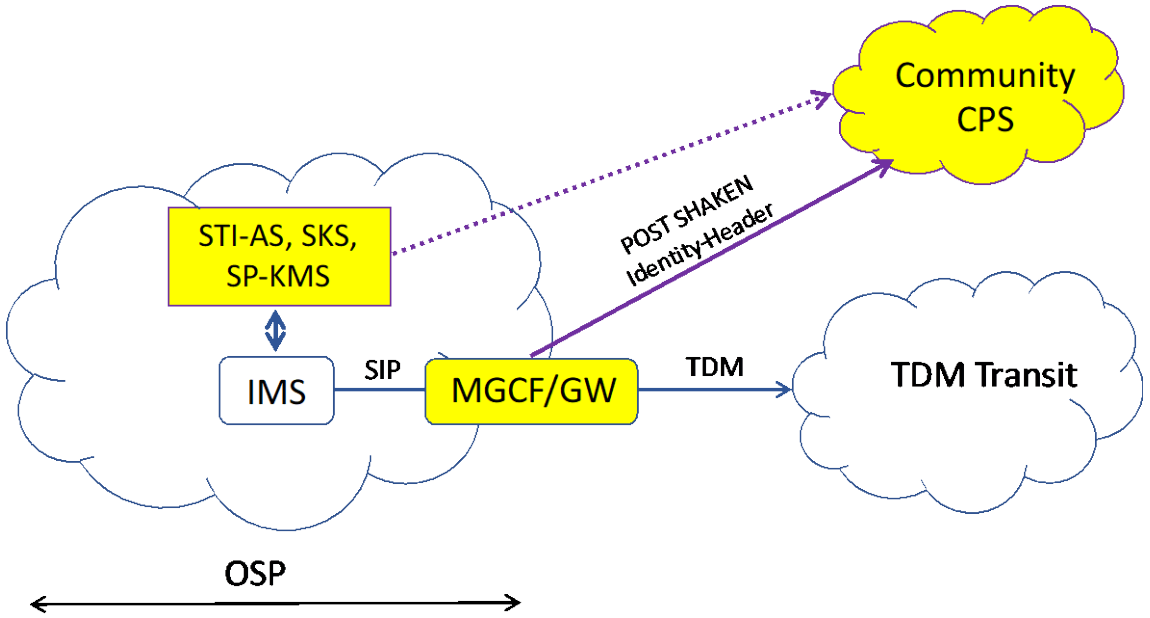
Landscape Technical Report

- Alternatives for Caller Authentication for Non-IP Traffic Technical Report.
  - Catalogs "non-IP" scenarios where SIP connectivity is not available end-to-end
  - Provides architectural descriptions of non-IP scenarios
  - Identifies potential call authentication frameworks for TDM
  - Proposes relevant factors when evaluating authentication frameworks



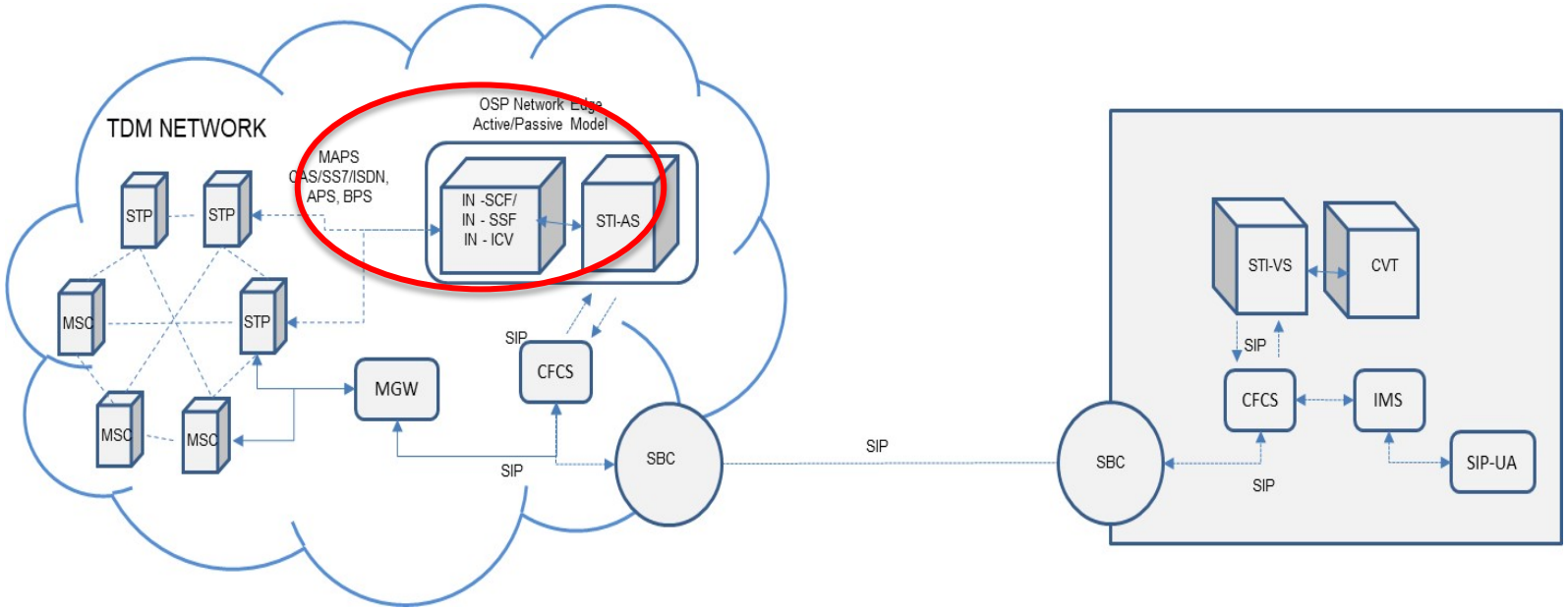
TDM-SHAKEN

- Signature-Based Handling of Asserted Information Using Tokens (SHAKEN) for TDM Networks ("TDM-SHAKEN").
  - Extends SHAKEN ecosystem to support TDM
  - Based on the concept of cooperation among a community of TDM service providers
  - Includes TDM transit providers
  - Does not place any new requirements on VoIP Service Providers



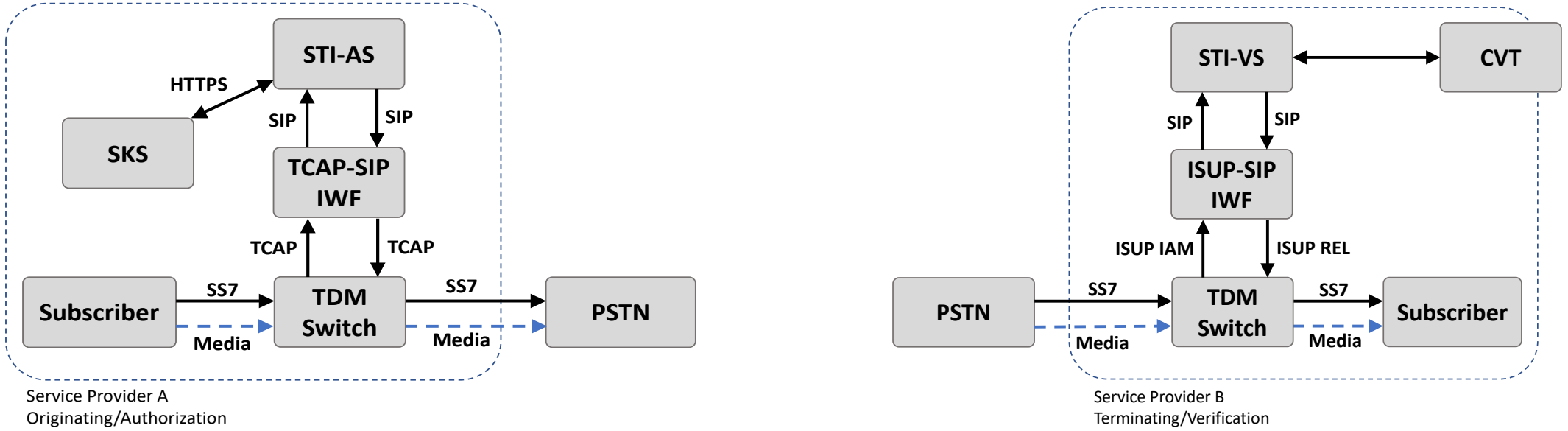
Initial Call Validation

- Initial Call Validation (ICV) Mechanism.
  - Illustrates TDM/SIP solutions including Initial Call Validation (ICV) function
  - Provides multiple scenarios showing ICV in TDM networks
  - Complements other TDM call authentication mechanisms



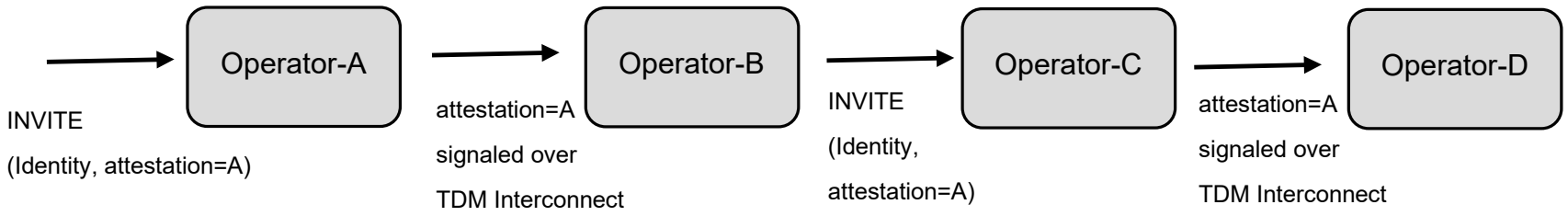
Out-of-Band for TDM

- Signature-Based Handling of Asserted Information Using Tokens (SHAKEN): Out-of-Band Token Transmission for TDM.
  - Builds on Out-of-Band SHAKEN framework
  - Identifies required functionality for TDM only OSP/TSP



TDM Interconnects

- Extending STIR/SHAKEN over TDM Interconnects.
  - Extends SHAKEN framework to enable transferring verified attestation levels over TDM interconnects



Future Work

- Complete document identifying caller authentication alternatives.
- Progress TDM call authentication frameworks to fully understand proposals.
- Investigate feasibility of proposed frameworks.
- Evaluate viability of implementing proposed call authentication frameworks.
- Document results of assessments.

Questions & Answers

Please submit questions using the "Questions" tab on the control panel located on the right side of your screen.

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Thank you for attending the

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Registered attendees will receive a follow up email containing links to a recording and the slides from this presentation.

www.atis.org