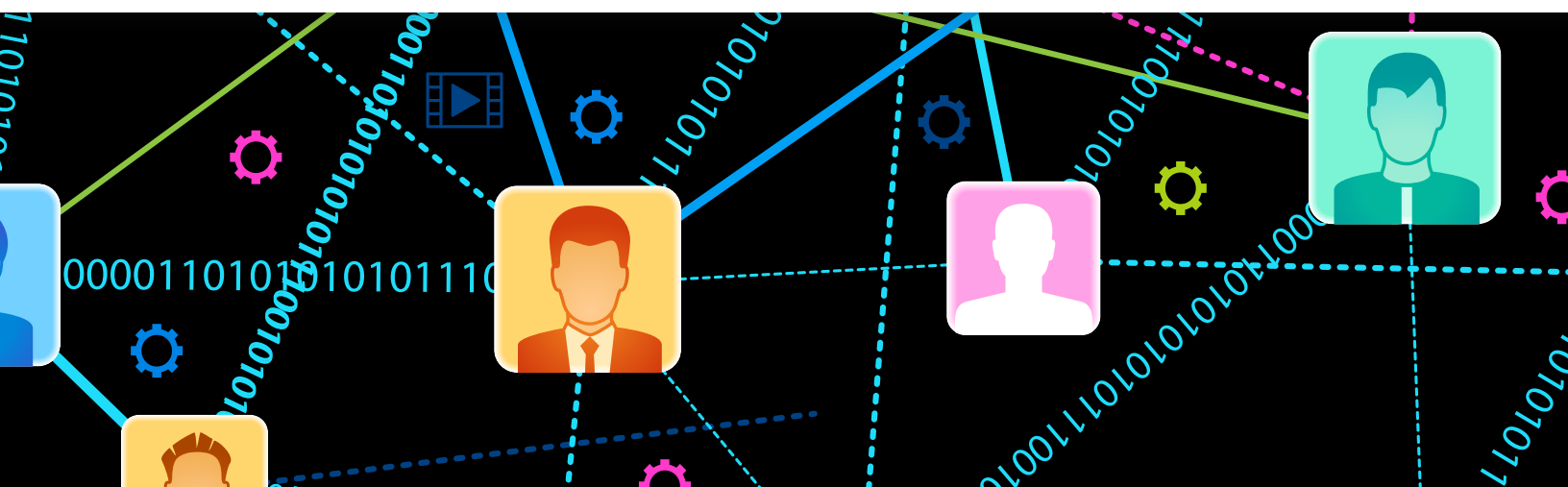


# Enterprise Identity on Distributed Ledger for Authenticated Caller Use Cases

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ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS  
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# Abstract

This document provides a description for using distributed ledger technology to provide enterprise identity verification to authenticate originating party caller information in IP communication networks. It describes problems associated with the attestation of a telephone number (TN) due to enterprise multi-homing with originating service providers that are not the allocation provider of the TN, within IP communication networks.

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# Introduction

The objective of the ATIS DLT project is to validate key aspects of distributed ledger technology as it applies to real-world challenges facing today's communications industry. Through the analysis of a specific use case, it will assess if the unique characteristics of DLT can be a game-changer by enabling innovative solutions to difficult problems experienced today in the communications space.

The basic idea behind the “enterprise identity use case” that the focus group has identified is to study how to leverage a distributed ledger to provide communications service providers with a better mechanism to validate that calling parties are entitled to use the telephone number (TN) that they are using.

This is especially difficult – and valuable – in complex calling scenarios. One example is a call center that's originating calls on behalf of an enterprise, using third-party calling platforms and multiple originating service providers (OSPs), for a short-term calling campaign such as a product recall. This real-world scenario is not adequately addressed by any solution today.

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## 1.1 Problem Statement

The Federal Trade Commission (FTC) and Federal Communications Commission (FCC) regularly cite “unwanted and illegal robocalls” as their No. 1 complaint category. Caller ID spoofing increases the harm from these unwanted calls. The ATIS-SIP Forum IP-NNI Task Force developed a specification designed specifically to mitigate unwanted robocalls by reducing the impact of caller ID spoofing. This specification, SHAKEN (Signature-based Handling of Asserted information using tokens), is based on the STIR (Secure Telephone Identity Revisited) protocol developed by IETF. SHAKEN allows the OSP to generate a digital signature, which securely signals the terminating service provider (TSP) that the caller has the right to use that phone number.

When a call is originated, the OSP will use the originating caller ID to create a digital signature, or token, that will accompany the call as it is being completed. At call termination, the TSP verifies that nothing was tampered with and ensures that the call came from an entity that has a legitimate right to use that number. The verification from SHAKEN can be displayed directly to the user or fed into a “call-blocking app,” which provides a rating system that essentially identifies calls as good, questionable or likely fraudulent. The call-blocking app can take