



# Lessons Learned from Certificate Governance for Telephone Numbers

What the telephone network's identity crisis can teach us about agentic AI trust

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ITU Workshop on Trustable and Interoperable Digital Identities — Geneva, 31 March 2026



# Somos: The Trust Infrastructure Behind Telephone Number Identity

## Deep Experience Administration Services

Supporting over 1,400+ Service Providers to offer critical connections assets

North American Number Plan Administrator



Toll-Free Number Administrator

8XX

Reassigned Numbers Administrator



## Global Number Intelligence Solutions

Full suite of Authentication Enablement and Identity Management Solutions serving multiple industries.

Fraud Mitigation, Compliance & Data Integrity



Routing Optimization



Connected Asset Management



# This Is Not a Nuisance. It Is an Epidemic.

**Robocalling and robotexting fraud is causing documented, large-scale harm:**

- **People losing life savings to phone and text impersonation scams, fake banks, government agencies, family emergencies, tens of billions annually**
- **Organized criminal networks enslaving people in scam compounds to staff fraud operations at scale — documented by the UN and law enforcement**
  - **AI bot armies now being recruited to replace enslaved humans; same attacks, far greater scale, lower cost, around the clock**

**The transition is already happening:**

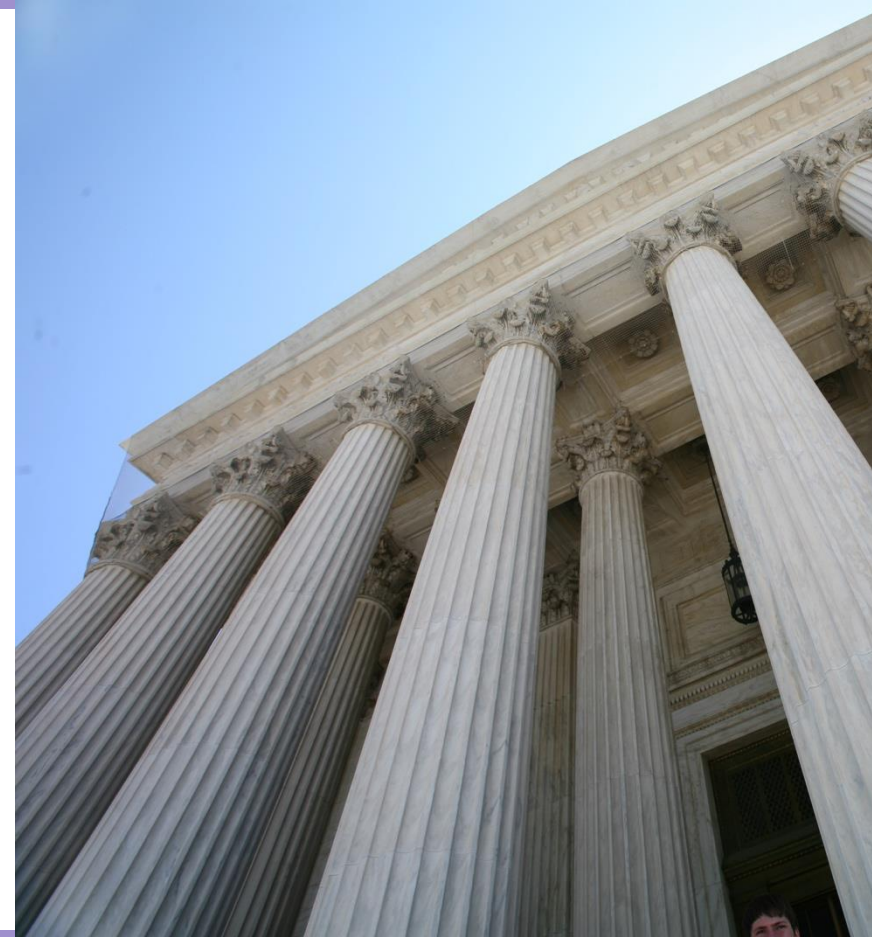
**Fraud that required humans is being handed to AI agents. An AI that can impersonate a bank representative and extract credentials is not a future risk: it is a current capability being actively deployed.**



# Technology Alone Cannot Stop This. Accountability Requires Jurisdictional Enforcement.

- **Without jurisdictional governance:**
  - No one to prosecute: bad actors span borders, exploiting enforcement gaps.
  - No license to revoke: no regulatory handle to remove bad actors from the network.
- **Jurisdictional governance provides:**
  - Legal accountability: responsible party identified, prosecutable under applicable law.
  - Regulatory action: licensed entity can have operating authority revoked.
  - Cross-border cooperation: shared trust frameworks extend accountability across borders.
- **The key insight:**

A cryptographic certificate is only as meaningful as the accountability of the entity holding it. If no one can revoke it, it is just a token. The jurisdictional governance layer is what gives the technical layer teeth.



# E.164: A Telephone Number as a Jurisdictional Identifier

- **Explicitly Jurisdictional**

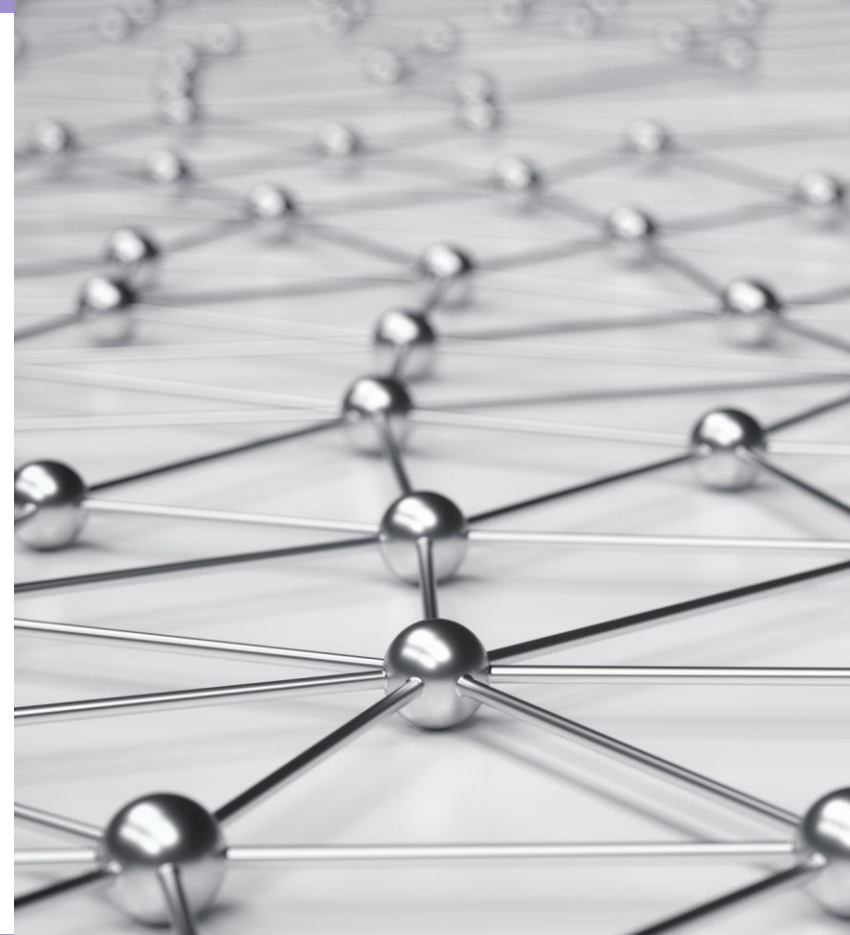
Country code + national number: the country code directly encodes legal and regulatory authority. Not a formatting convention: a governance claim.

- **Governed at the ITU**

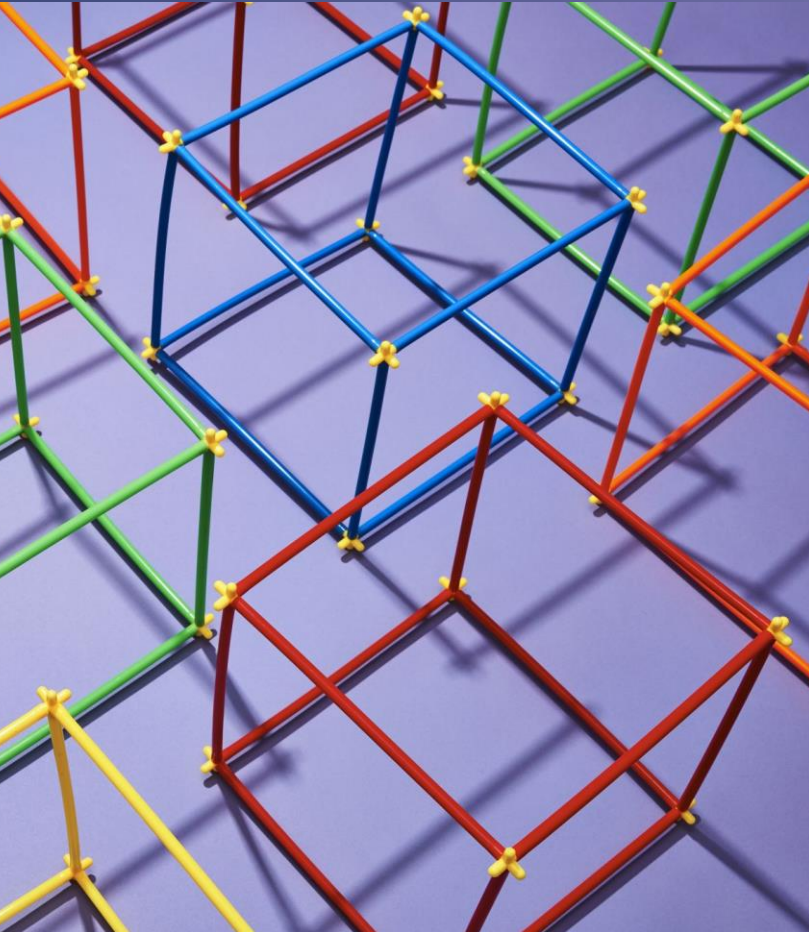
ITU-T SG2 governs E.164 and mobile identifiers (MCC/MNC, E.212) a telecommunications identity authority, not just a number registry.

- **Governance Architecture for AI?**

E.164's model, explicit authority, layered accountability, sovereign policy, is instructive for any identity framework operating across borders. IETF WIMSE and SPIFFE/SPIRE are exploring similar patterns for agent identity.



# SHAKEN in North America and the ITU Effort to Make It Global



SHAKEN established the model:

**Policy Admin → Certificate Authority → Licensed CSP → Number Registry**

Each layer accountable to the next.

A gap at any layer = exploitable trust surface.

Current limitation: cross-border deployment is a bilateral US–Canada arrangement.

The ITU-T SG2 operational model — active work:

**SG2 E.RAA4Q.TSCA**: centrally governed cross-border trust anchors — under the same body that governs E.164 country codes. **Sovereignty expressed through country codes..** Trust governed in the same place.

# What the Telephone Network Learned the Hard Way

| Lesson from Telecom   | Implication for Agentic AI  |
|---|---|
| <b>Unverified identity = fraud surface: No caller ID binding led to an impersonation epidemic</b> | No agent identity binding → impersonation at internet scale                 |
| <b>Identity ≠ authorization: Number ownership ≠ right to sign calls</b>                           | Agent credential ≠ right to act   |
| <b>Accountability must be traceable: Chain traces to a regulated, responsible CSP</b>             | Chain must trace to an accountable human or corporation                     |
| <b>Accountability must be layered:<br/>Policy → CA → CSP → Registry</b>                           | Clear delegation chain required for agent identity                          |
| <b>Right-to-use must be explicit: RTU closes the gap between assignment and signing authority</b> | Agentic AI needs explicit, verifiable authorization not just a credential   |
| <b>Jurisdictional context is structural: E.164 country code encodes regulatory authority</b>      | Agent identity should carry jurisdictional context                          |
| <b>Transparency enables auditing: Public logs of credential issuance</b>                          | Audit logs for agent identity assertions                                    |
| <b>Governance gaps cross borders: Bilateral today;<br/>ITU-T SG2/SG11 extending globally</b>      | Agentic AI could benefit from a multilateral governance anchor from day one |

# Restoring Trust in the World's Communications- What Telephone Identity Governance Teaches Us About What Comes Next

**The telephone network built a hard-won authentication and governance response to communications fraud:**

- **Certificate-based identity tied to jurisdictional accountability**
- **CSP gatekeepers with revocation authority**
- **Cross-border trust anchors — being extended globally through ITU-T right now**

**Agentic AI changes the scale:**

- **Human labor was a bottleneck for fraud at scale. AI removes that.**
- **Multi-vector attacks: calls, texts, email, transactions simultaneously, around the clock**
- **An observable transition, already underway**

**A jurisdictionally bound identity and certificate governance model is worth serious consideration as a reference architecture at minimum for communications-channel interactions, potentially more broadly.**