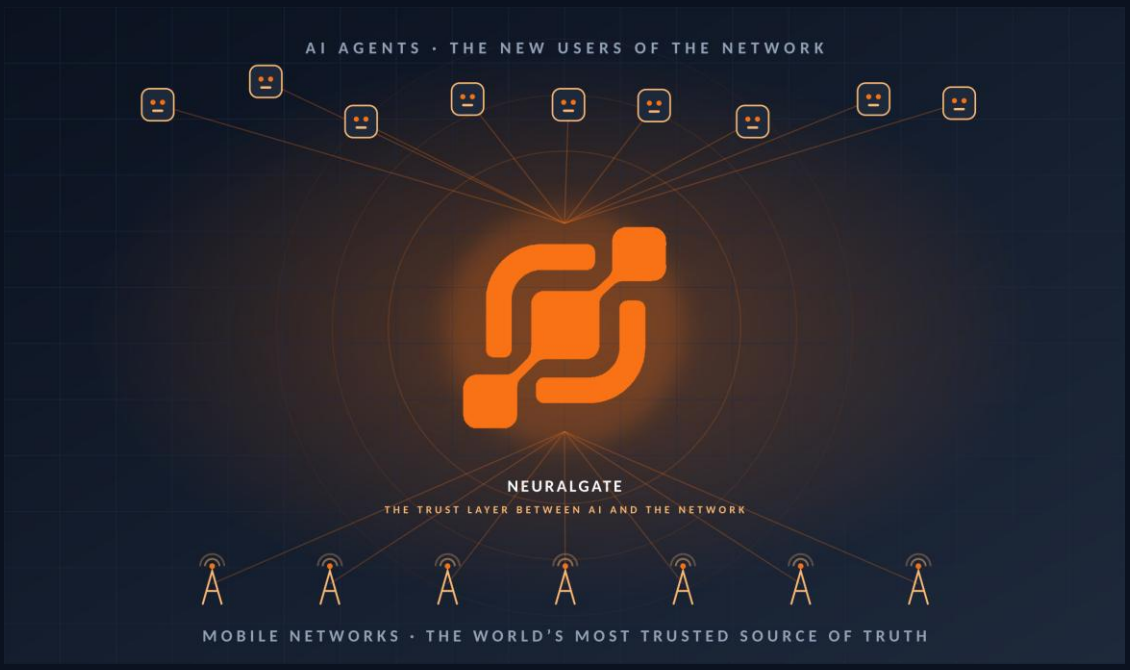
TELCONODE

WHITEPAPER · SEPTEMBER 2026



When the Network Gets a Brain

Network APIs, AI agents, and the missing trust layer between them

Kedarnath Gupte
Founder & CEO, TELCONODE Technologies LLC · Dubai

Contents

Summary

Mobile networks know something no app can fake: whether a phone is real, where it truly is, and whether its SIM card was swapped an hour ago. For years that knowledge stayed locked inside each operator. Two things have changed at once, and together they create a new category.

First, the world's operators have agreed on a common way to open their networks to outside software, the GSMA Open Gateway programme, built on the open-source CAMARA standard. Three years after launch, more than 300 of these network capabilities are commercially live in 65 markets, and the operator groups behind them cover about 80 per cent of the world's mobile connections. [1]

Second, the user of that software is changing. Increasingly it is not a human developer reading documentation, but an autonomous AI agent acting on a company's behalf. Ericsson's researchers call this the shift from "developer experience" to "agentic experience": capabilities must now be machine-delegable, with clear signals about authority, cost and constraints before an agent is allowed to act. [2]

Today, agents can reason brilliantly but cannot safely reach the network. The standards exist on the network side; the open protocol for agents exists on the AI side (the Model Context Protocol, now governed by the Linux Foundation [3]). What is missing is a trustworthy layer between them: one that explains network capabilities to a machine in plain terms, asks the person for permission, records that permission, and enforces hard limits on what the agent may do.

This paper explains the opportunity in everyday language, sets out the latest developments, and introduces **NeuralGate by TELCONODE**, **set to go live in the next 6 weeks**, and our answer to that missing layer. Where we use an industry term, it is defined in the glossary at the end.

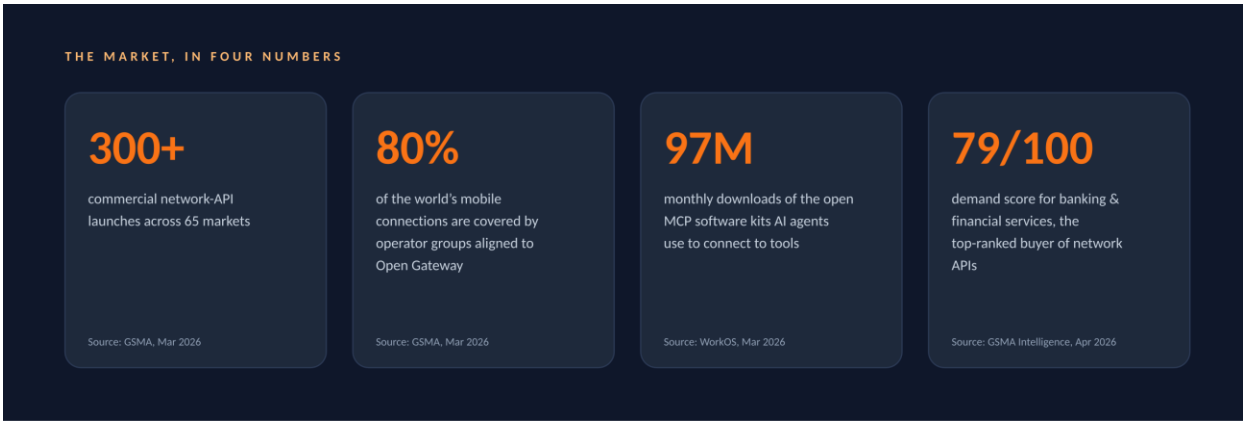


Figure 1 — Four numbers that describe the moment. Sources in the References section.

1 Every mobile network is a hidden superpower

Think of an API as a restaurant menu. The menu lists what you can order and describes each dish. You place an order; the kitchen does the complicated work and brings you the finished meal. You never need to know how the kitchen operates. An API is a digital menu that lets one piece of software ask another to do a job.

A network API is that same idea applied to a mobile network. It lets an outside application ask the network a question or request a service: Is this phone number really connected right now? Has this SIM card been replaced recently? Can I have a guaranteed-quality connection for the next ten minutes? Because the answer comes from the network's own live records and not from something typed into an app, it is unusually hard to fake.

> **WHY THIS MATTERS**
>
> A password can be phished. A text-message code can be intercepted. A location reported by an app can be spoofed. But the network knows which physical SIM card is connected to which cell tower at this second. That is the ground truth on which every digital transaction ultimately rests, and until recently, almost nobody outside the operator could use it.

The obstacle was fragmentation. Every operator built its own interfaces, its own contracts, its own security model. A bank wanting to use this data across one country had to negotiate with each operator separately; across ten countries, the effort became unmanageable. Enterprises want to buy network capabilities, but they cannot afford to integrate with each operator one by one.

2 Where the industry stands today

The GSMA Open Gateway initiative was launched in February 2023 to solve exactly that fragmentation, with eight standard network capabilities defined through the CAMARA open-source project. The message from the 2026 Open Gateway Summit was blunt: the era of pilots is over, network APIs are generating real revenue in real markets, and the measure that matters now is time-to-distribution rather than time-to-first-API. [4]

Three signals from the data

- **Distribution is winning.** Enterprises prefer one integration to thirty bilateral operator agreements. GSMA Intelligence reports the market moving away from operator-specific exposure and toward platform-mediated distribution, with the aggregator Aduna achieving full coverage of the three major US carriers and expanding to 40 operators worldwide. [5] [6]
- **Banking is the clear front-runner.** GSMA Intelligence's Open Gateway Demand Index, built on surveys of more than 5,300 senior decision-makers across 32 countries, ranks banking and

financial services first with a score of nearly 79 out of 100, driven not by market size but by how much demand already exists. [7]

- **The catalogue is maturing.** Beyond fraud and identity, capabilities such as Quality on Demand, device information and location are now being deployed commercially, and the broadcast industry has formally asked operators to expose guaranteed-quality connections for live 5G production from late 2026. [8] [9]

Who	What they are betting on	Where it leaves them
Mobile Operators	Monetising the network directly to avoid becoming a commodity pipe	Strong data, weak distribution
Aggregators	Simplicity: one contract, many operators	Reach, but human-first interfaces
Communications Platforms	Existing developer trust and channels	Distribution, but not network ownership
Equipment Vendors	Climbing into orchestration and agentic AI	Deep networks, less enterprise intimacy
Cloud Providers	Folding network capability into workflows enterprises already use	Scale, but dependent on operator supply

Table 1 — The competing players. Standardisation is no longer the moat; everyone works from the same CAMARA specifications.

Our reading of the next eighteen months is that the market will not consolidate around whoever has the biggest catalogue. It will belong to whoever removes the most friction between “the capability exists” and “enterprises are paying for it, at scale, across markets, currencies and operators, in one contract.” And, increasingly, the party doing the buying will not be a person.

3 The new user of the network is not a person

Artificial intelligence has moved through three stages. Predictive systems learned patterns from data. Generative systems, made famous by chat assistants, create text and images on request. The current stage is agentic: software that understands a goal, plans the steps, uses tools, and carries the job through while staying aligned with what the person actually wanted.

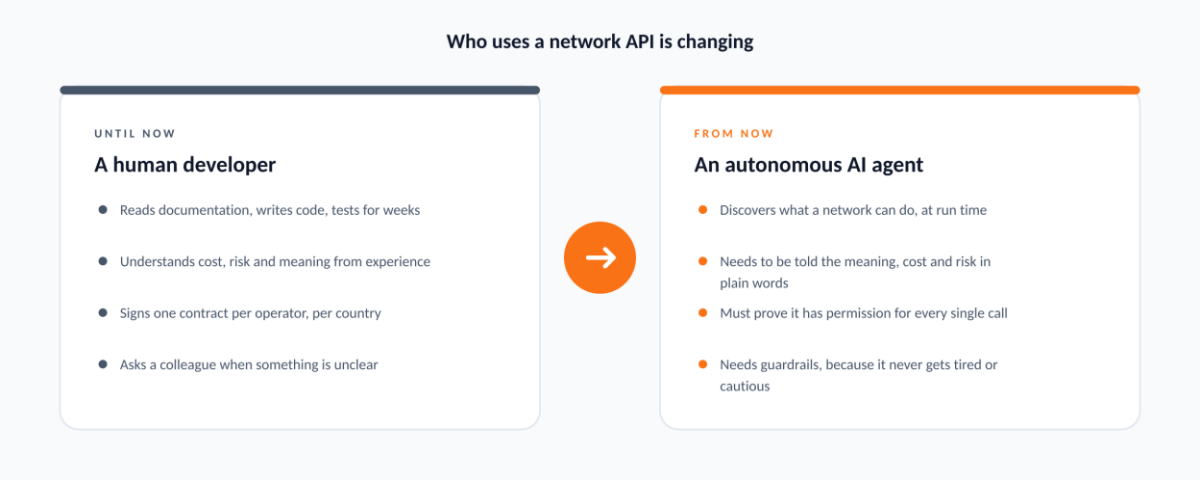


Figure 2 — The same capability, two very different consumers.

The consequence for networks is profound. Ericsson's researchers put it well: agents need to understand not only what a network function does, but under what authority, constraints and economic responsibility it can be invoked. In practice, they write, the agentic experience is less about machine-readable APIs and more about machine-delegable capabilities. [2]

An open language for agents to use tools

For an agent to use any tool safely, the industry needed a shared standard for how agents discover and call tools, the equivalent of a universal plug. That standard is the Model Context Protocol (MCP), introduced in late 2024 and donated in December 2025 to the Agentic AI Foundation under the Linux Foundation, with Anthropic, OpenAI and Block as co-founders and Google, Microsoft, Amazon Web Services and others as supporters. [3]

Adoption has been extraordinary. More than 10,000 public MCP servers exist, the protocol is supported by every major AI platform, and its software kits were downloaded roughly 97 million times a month by March 2026. [10] This is why NeuralGate is built on MCP from the ground up: an agent that already speaks this language can find and use a network capability with no bespoke integration.

The telecom industry has noticed

At Mobile World Congress 2026, Nokia and Google Cloud announced an integration of Nokia's Network as Code platform with Google's agentic AI stack using MCP, so enterprise agents can consume network capabilities through natural-language workflows without writing API code. [11] Aduna's Chief Commercial Officer has publicly described work on a "middle layer" for AI agents, noting that telecoms have historically been hard to deal with and that agents could unlock demand for use cases such as fraud prevention. [12]

> **THE GAP WE ARE CLOSING**

> The standards exist on both sides. What does not yet exist is a purpose-built layer that translates network capabilities into something an agent can reason about, asks the person for permission, records that permission in a way regulators will accept, and stops the agent if it strays. Bolting an agent interface onto a human-first aggregator does not solve this. It has to be designed in.

4 Why the SMS text-message code is failing us

For fifteen years the default way to prove you are you has been a six-digit code sent by text message. It was convenient and it was cheap. It is now one of the weakest links in digital security.

The weakness is structural, and it is being exploited on a growing scale. As more of daily life moves online, so does crime: the FBI's Internet Crime Complaint Center logged $16.6 billion in reported losses across all categories in 2024, from a record 859,000 complaints, and the true figure is higher because most victims never report.[13] A phone number has become the master key to that life. It is where banks send codes, where password resets arrive, and where identity is confirmed. Criminals know this. In the United Kingdom, nearly half of all account takeovers in 2024 involved a mobile phone account, and the fraud-prevention body Cifas recorded a more than ten-fold rise in unauthorised SIM swaps, the attack in which a criminal moves a victim's number onto a SIM card they control so that every code meant for the victim arrives with them.[14] The lesson is not that one particular attack is growing. It is that anything which trusts the phone number alone, rather than the physical SIM and the live network behind it, is now a liability.

Standards bodies are responding. The latest revision of the US government's digital identity guidelines (NIST SP 800-63B) classifies text-message and phone-call codes as a "restricted" form of authentication.[15] As the CAMARA project has put it, one-time passwords by SMS are not only insecure, they are a terrible user experience.[16]

	SMS code	Network verification
How it works	A code is sent to the phone; the user types it in	The network silently confirms the phone is real and connected
Can it be intercepted?	Yes: SIM swap, phishing, malware	No code exists to intercept
User effort	Wait, read, type, retry	None; it happens in the background
Detects a recent SIM swap?	No	Yes, directly from operator records
Works over Wi-Fi?	Yes	Yes, through modern operator authentication

Table 2 — Replacing the code with the network's own answer.

Regulation is pushing in the same direction. Data-protection and online-safety laws in the EU, the UK, India and elsewhere increasingly require that any use of personal data be explicit, tied to a stated purpose, and time-limited. Mobile Network Operators are uniquely placed to provide the age and identity checks these laws demand. [16]

5 What an AI agent needs before it can be trusted

Handing a network capability to an autonomous agent is not the same as handing it to a developer. A developer reads, pauses and asks. An agent acts at machine speed and, if it is wrong, repeats the mistake thousands of times. So the bar for trust is higher, and it has four parts.

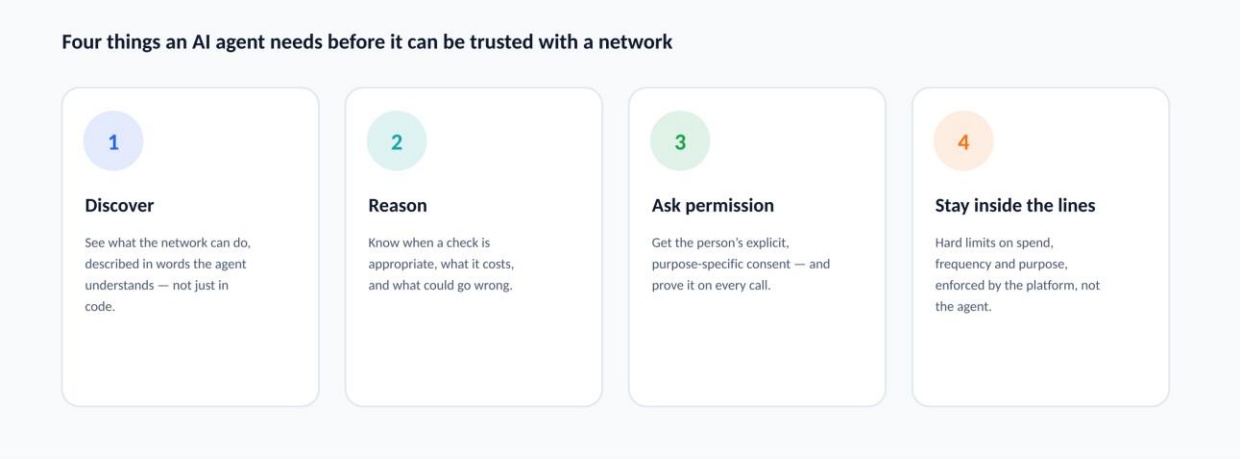


Figure 3 — The four requirements for safe, agent-ready network access.

- **Discover.** The agent must be able to see what the network can do, described in plain language it can reason with, not only in code. A capability the agent cannot understand is a capability it will either ignore or misuse.
- **Reason.** The agent must know when a check is appropriate, what it costs, and what the consequences of a wrong call are. A location check for fraud prevention is very different from a location check for marketing.
- **Ask permission.** The person whose data is involved must be asked, in words they understand, for a specific purpose, for a limited time, and the agent must be able to prove that permission on every call.
- **Stay inside the lines.** Limits on spending, on how often a phone can be located, and on reusing a permission for a different purpose must be enforced by the platform, independent of the agent. An agent cannot be trusted to police itself.

A traditional provider delivers the first requirement partially and the others not at all, because it was built for a human who supplies the reasoning, the ethics and the restraint. NeuralGate was designed from the start for a consumer that supplies none of them.

6 Introducing NeuralGate

NeuralGate is TELCONODE's platform for giving AI agents safe, permissioned access to mobile-network capabilities. It sits between the AI world and the network world, and it does four jobs.

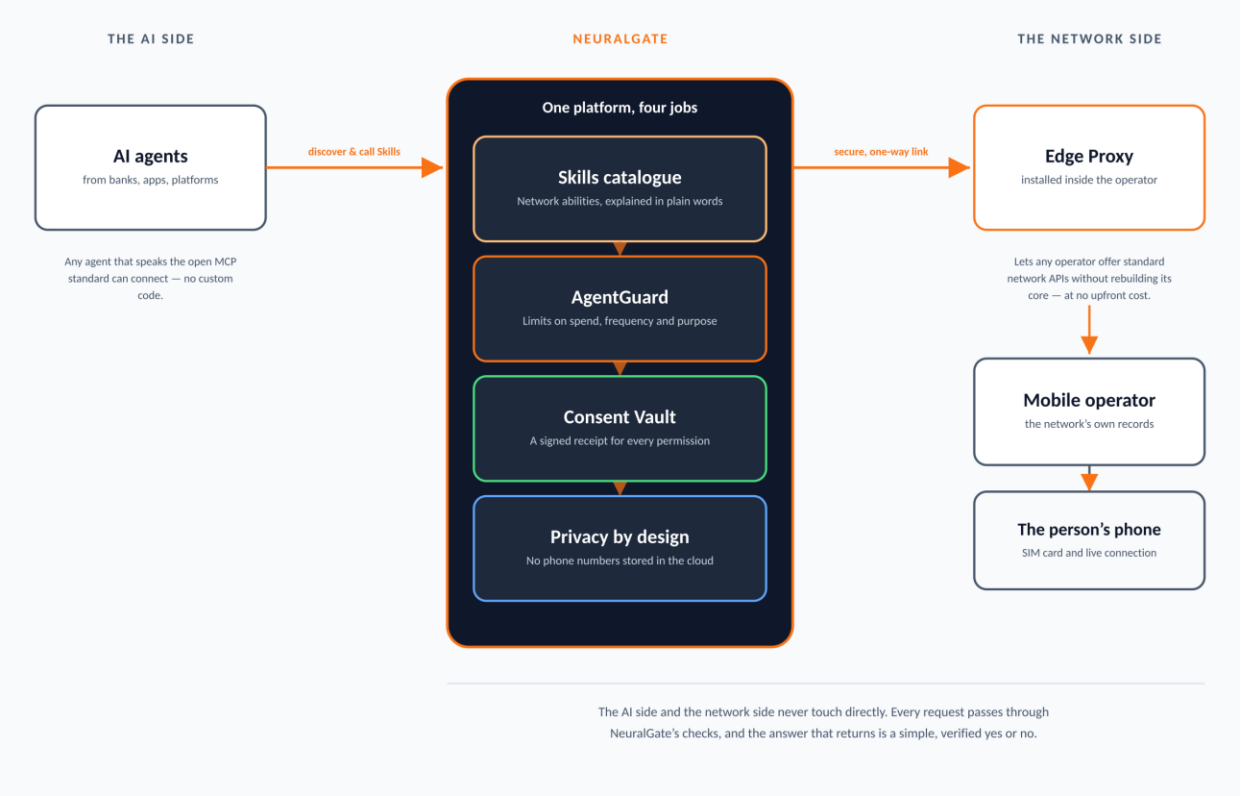


Figure 4 — How NeuralGate connects AI agents to mobile networks.

A catalogue of Skills, explained in plain words

NeuralGate takes each standard CAMARA network capability and repackages it as a Skill: a self-describing service that tells an agent not just how to call it but when and why it is appropriate, what it costs, and what a good or bad answer means. Because the Skills are published over MCP, any agent that already speaks that standard, from a bank's fraud assistant to a customer-service bot, can find and use them without custom integration work. Human developers are not left out: the same capabilities are also available as conventional interfaces.

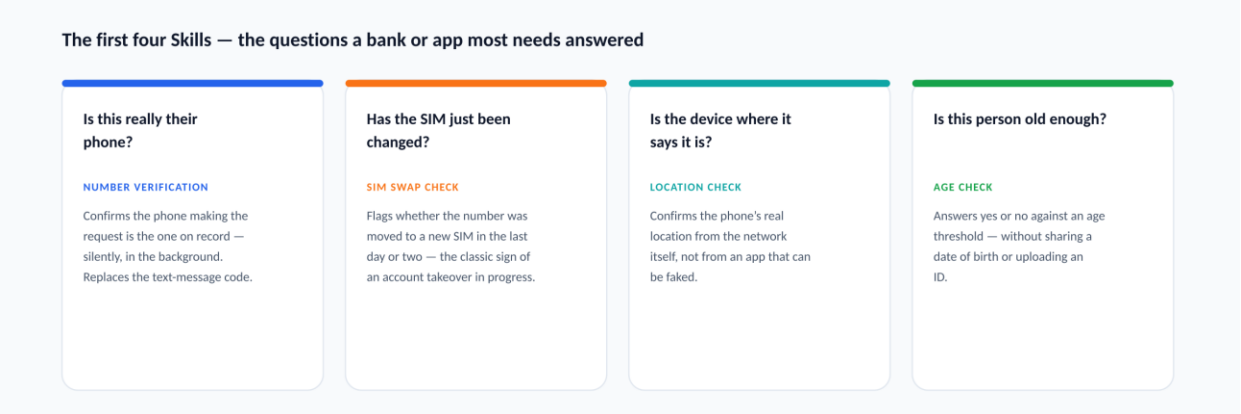


Figure 5 — The first four Skills, chosen because they answer the questions banks and digital businesses ask most.

AgentGuard: the limits an agent cannot cross

Every request passes through a policy engine that decides, in a few milliseconds, whether it is allowed. Location checks on a single phone are capped at a handful per minute to prevent tracking. Spending is tracked continuously and a rogue session is cut off the moment it breaches its budget. A permission granted for fraud prevention cannot be reused for advertising. These rules are enforced by NeuralGate, not by the agent, so a misbehaving agent is contained rather than trusted.

The Consent Vault: a receipt for every permission

When a person grants permission, NeuralGate records a signed digital receipt: what was agreed, for what purpose, and until when. Permissions always expire. If the person withdraws consent, the platform propagates the change within seconds and subsequent requests are refused. This turns consent from a line in a contract into evidence that can be shown to a regulator.

Privacy by design

Raw phone numbers and device identifiers are never written to NeuralGate’s cloud databases, logs or monitoring. They stay inside the operator’s domain or in short-lived memory, and everything else works with rotating, non-reversible tokens. The platform can verify a person without holding anything that identifies them.

The Edge Proxy: bringing every operator to the table

Large operators in Europe and North America already have modern API gateways. Many operators in fast-growing, high-fraud regions do not, and cannot justify building one. TELCONODE’s Edge Proxy is an agentic software appliance installed inside the operator’s own environment. It spends its first thirty days quietly learning how the operator’s systems are organised, then translates standard requests into whatever the operator’s equipment understands, with no change to the operator’s core network and no upfront cost. If the connection to the cloud is lost, the proxy keeps answering basic checks locally.

7 Sarah’s transfer: a two-second story

The easiest way to understand NeuralGate is to watch it work. Sarah is a US bank customer on a work trip to London. She opens her banking app in a café and sends $5,000 to a supplier.

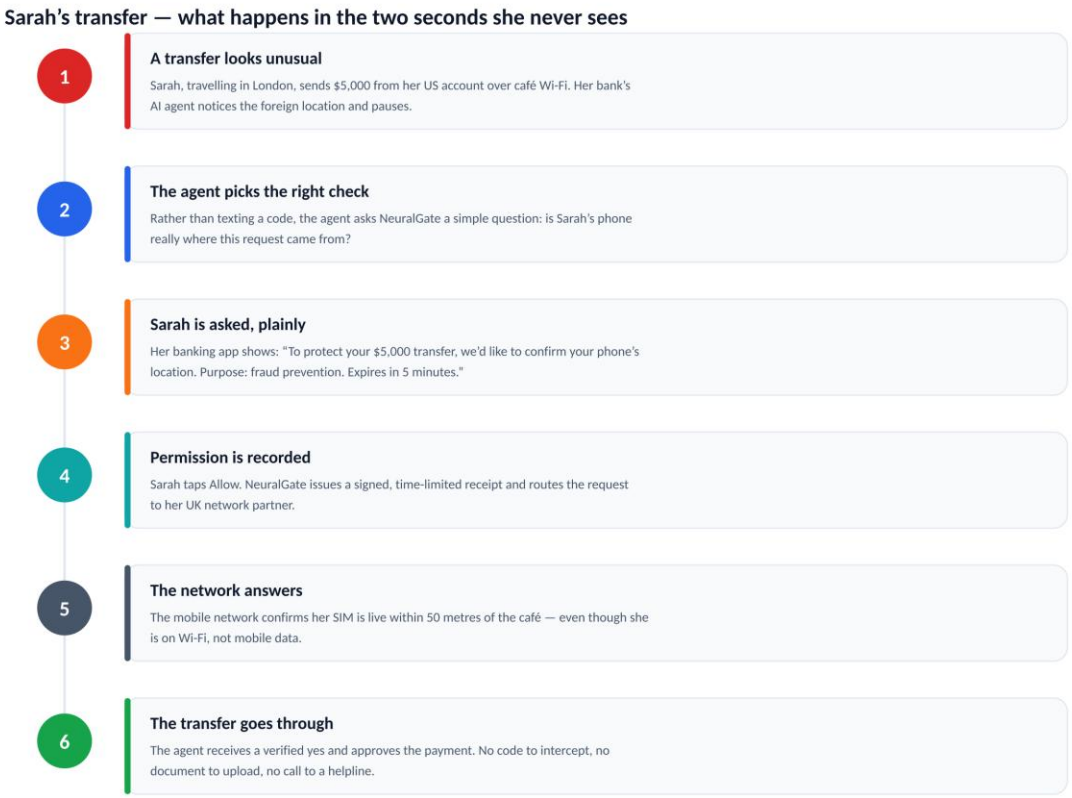


Figure 6 — Six steps, none of them visible to Sarah except the single question she is asked.

WHAT DID NOT HAPPEN

No six-digit code was sent, so there was nothing for a criminal to intercept. No document was uploaded and no date of birth was stored. The bank never learned Sarah’s exact location, only that the network confirmed her phone was where the request came from. The permission she gave expired five minutes later and could not be reused for anything else.

8 What this means for partners

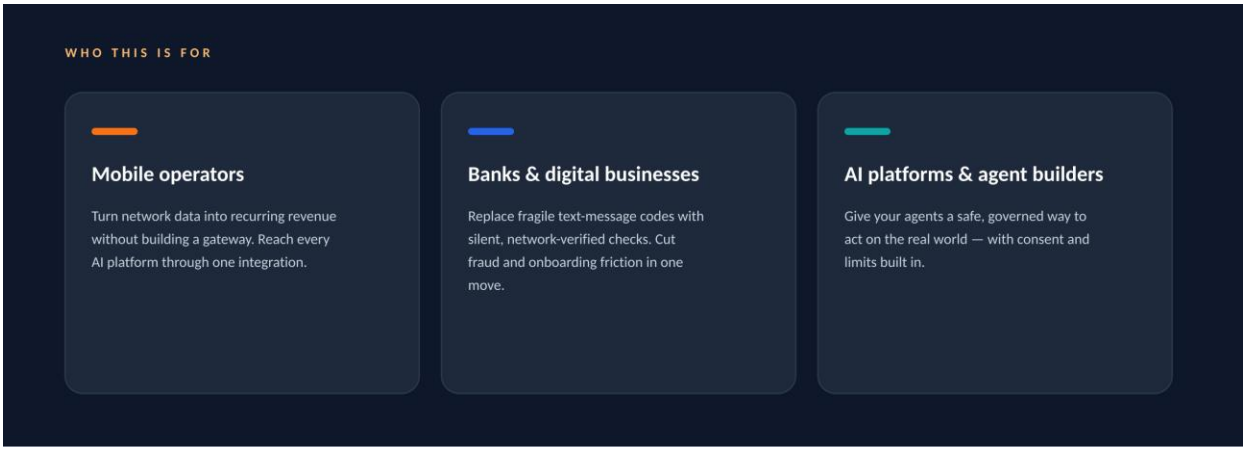


Figure 7 — Three groups, one platform.

For mobile operators

You hold the most reliable, deterministic identity data in the digital economy: the SIM card and the live network. NeuralGate lets you monetise it without building your own gateway or negotiating with every AI platform. Deploy the Edge Proxy at no upfront cost, and your network becomes a Skill that every compliant agent can discover. Pricing is tied to outcomes, fraud prevented and accounts protected, rather than to pennies per lookup.

For banks, fintechs and digital businesses

Replace fragile text-message codes with silent, network-verified checks. Cut onboarding abandonment, reduce account-takeover losses, and satisfy regulators who now expect explicit, purpose-bound consent. Integration takes days rather than months, and works across every operator NeuralGate reaches under a single agreement.

For AI platforms and agent builders

Your agents can already reason. NeuralGate lets them act on the physical world of phones and networks safely, with consent and limits handled by the platform. If your agent speaks MCP, it can use NeuralGate today.

Commercial Tier	Best for	What you get
Standard	Existing developer teams	Conventional interfaces, volume pricing

Commercial Tier	Best for	What you get
Professional	Teams deploying AI agents	Full Skills catalogue over MCP, intent-aware routing, ready-made consent screens
Enterprise Agent	Regulated institutions at scale	Everything above, plus full AgentGuard policy control and outcome-based pricing

Table 3 — How partners engage.

9 The road ahead

Standardisation built the runway; monetisation still has to take off. Our view is that the take-off will be catalysed by agents rather than by developers, and that it will happen first in banking and financial services, where demand is already proven and the cost of failure is highest.

The industry's own leaders are converging on this. Ericsson sees network APIs being exposed through agent-friendly interfaces such as MCP and evolving into telecom-grade agentic platforms that integrate network data, exposure APIs, policy controls and automation into a single programmable environment.

That is a description of NeuralGate. We are launching with four Skills, in markets where every operator can be brought live so that a use case works for every customer, not just some. We are inviting operators, financial institutions and AI platform builders to join as design partners now. [17]

> **OUR BELIEF**
>
> Treating a mobile network as a dumb pipe was always a waste. Treating it as a source of truth that only humans can query is a waste of a different kind. When the network gets a brain, when an agent can ask it the right question, with permission, within limits, and get a verified answer in two seconds, the whole digital economy becomes a little safer and a great deal simpler. That is what we are building.

PARTNER WITH TELCONODE

Be part of the launch.

NeuralGate goes live in six weeks. We are onboarding a first cohort of operators, banks and AI platforms as design partners.

Kedarnath Gupte · Founder & CEO, TELCONODE Technologies LLC · www.telconode.com

Glossary

Plain-English definitions of the industry terms used in this paper.

Term	Meaning
Agent (AI agent)	Software that can understand a goal, plan the steps, use tools and complete the job on a person's or company's behalf, with limited supervision.
Agentic AI	The current stage of artificial intelligence, in which systems act autonomously rather than only answering questions.
Aggregator	A company that connects to many mobile operators and offers their network capabilities through one contract and one integration.
API (Application Programming Interface)	A digital menu that lets one piece of software ask another to do a job, without needing to know how it works inside.
CAMARA	An open-source project under the Linux Foundation that defines the standard network APIs used by the Open Gateway programme.
Consent	Explicit permission from a person to use their data for a stated purpose and a limited time.
Edge Proxy	TELCONODE's software appliance, installed inside an operator, that lets the operator offer standard network capabilities without rebuilding its systems.
GSMA	The global industry body representing mobile operators.
GSMA Open Gateway	The industry programme, launched in 2023, through which operators expose standard network capabilities to enterprises and developers.
MCP (Model Context Protocol)	An open standard, governed by the Linux Foundation, that defines how AI agents discover and use external tools and data. Think of it as a universal plug.
MNO (Mobile Network Operator)	A company that runs a mobile network and issues SIM cards; a carrier.
Network API	An API that lets outside software ask a mobile network a question or request a service, using the network's own live data.
NeuralGate	TELCONODE's platform that turns network capabilities into consent-governed Skills that AI agents can safely use.
OTP (One-Time Password)	A temporary code, usually sent by text message, used to confirm identity. Increasingly considered insecure.
Quality on Demand	A network capability that lets an application request a guaranteed connection quality for a period of time.
SIM / SIM swap	The chip that identifies a phone on the network. SIM swapping is a fraud in which a criminal moves a victim's number to a SIM they control.

Term	Meaning
Skill	In NeuralGate, a network capability repackaged as a self-describing, consent-governed service that an AI agent can discover and use.

References

[1] GSMA, "From Ambition to Execution: How Open Gateway Is Scaling the Global API Economy", March 2026. https://www.gsma.com/newsroom/article/from-ambition-to-execution-how-open-gateway-is-scaling-the-global-api-economy/

[2] Ericsson, "Four ways agentic AI will reshape telecom", April 2026. https://www.ericsson.com/en/blog/2026/4/four-ways-agentic-ai-will-reshape-telecom

[3] Linux Foundation, "Linux Foundation Announces the Formation of the Agentic AI Foundation", December 2025. https://www.linuxfoundation.org/press/linux-foundation-announces-the-formation-of-the-agentic-ai-foundation

[4] GSMA, "The Growth Engine is Ready. Now What?", MWC26 Open Gateway Summit, April 2026. https://www.gsma.com/solutions-and-impact/gsma-open-gateway/the-growth-engine-is-ready-now-what/

[5] GSMA Intelligence, "GSMA Open Gateway: State of the Market, H1 2026", July 2026. https://www.gsmaintelligence.com/research/gsma-open-gateway-state-of-the-market-h1-2026

[6] Aduna, "Aduna Accelerates Global Network API Adoption with Major Ecosystem Expansion at MWC", March 2026. https://www.prnewswire.com/news-releases/aduna-accelerates-global-network-api-adoption-with-major-ecosystem-expansion-at-mwc-302702813.html

[7] GSMA, "Who's ready to buy network APIs and who's still on the fence?" (Open Gateway Demand Index), April 2026. https://www.gsma.com/solutions-and-impact/gsma-open-gateway/whos-ready-to-buy-network-apis-and-whos-still-on-the-fence/

[8] GSMA Intelligence, "GSMA Open Gateway: State of the Market, H2 2025", December 2025. https://www.gsmaintelligence.com/research/gsma-open-gateway-state-of-the-market-h2-2025

[9] GSMA, "Broadcast Industry Urges Mobile Network Operators to Help Commercialise Live Production Over 5G", April 2026. https://www.gsma.com/solutions-and-impact/gsma-open-gateway/broadcast-industry-urges-mobile-network-operators-to-help-commercialise-live-production-over-5g-by-exposing-standardised-quality-on-demand-a/

[10] WorkOS, "Everything your team needs to know about MCP in 2026", March 2026. https://workos.com/blog/everything-your-team-needs-to-know-about-mcp-in-2026

[11] Mordor Intelligence, "Network API Aggregation Platforms Market" (MWC 2026 developments), 2026. https://www.mordorintelligence.com/industry-reports/network-api-aggregation-platforms-market

[12] TelecomTV, "Aduna explores agentic AI layer to unlock telco API potential", March 2026. https://www.telecomtv.com/content/unthinkable/aduna-explores-agentic-ai-layer-to-unlock-telco-api-potential-54989/

[13] FBI Internet Crime Complaint Center, Internet Crime Report 2024 (859,532 complaints; $16.6 billion reported losses), as summarised in Efani, "SIM Swap Fraud Statistics 2026", December 2025. https://www.efani.com/blog/sim-swap-fraud-statistics-2026

[14] Cifas Fraudscape 2025 (1,055% rise in unauthorised SIM swaps; 48% of account takeovers involved mobile accounts), as reported in DeepStrike, "SIM Swap Scam Statistics 2025", September 2025. https://deepstrike.io/blog/sim-swap-scam-statistics-2025

[15] NIST SP 800-63B Rev. 4 (2025), as summarised in Stingrai Research, "SIM Swap Statistics 2026", May 2026. https://www.stingrai.io/blog/sim-swap-statistics-2026

[16] GSMA, "Open Gateway Blog: Unlocking the Power of Network APIs", May 2026. https://www.gsma.com/solutions-and-impact/gsma-open-gateway/open-gateway-unlocking-the-power-of-network-apis/

[17] Ericsson, "Agentic AI for autonomous telecom networks" (white paper), August 2026. https://www.ericsson.com/en/reports-and-papers/white-papers/adapting-agentic-ai

Market figures are as published by the cited sources at the time of writing (September 2026). Product capabilities described reflect NeuralGate's launch scope and roadmap.