

# **dTelecom: Decentralized Real-Time Communication Network with AI: A DePIN-Based Architecture**

*Redefining global connectivity through blockchain, community-driven AI, and tokenized participation. Build, Own, and Earn in the next era of secure, intelligent, and scalable RTC.*

Founders: Petr Malyukov, Vadim Filimonov  
Project Start Date: February 2022

## **Abstract**

In an era where digital interconnectivity is paramount, dTelecom emerges as a pioneering force in the realm of real-time communication (RTC), introducing a Decentralized Physical Infrastructure Network (DePIN) that reshapes the landscape of digital exchanges. This whitepaper elucidates dTelecom's groundbreaking approach, using blockchain decentralization and community-powered AI to enhance the security, privacy, intelligence, and efficiency of RTC.

dTelecom's DePIN architecture transcends the constraints of traditional centralized systems, offering a robust, scalable, AI-enhanced, and cost-effective communication solution. AI plays a critical role in the network — intelligently optimizing traffic routing, moderating content, enabling real-time translation and voice enhancements, and powering seamless interaction between users and Large Language Models (LLMs) for next-gen communication experiences.

Through its comprehensive SDK/API suite, dTelecom enables businesses to BUILD real-time voice, video, and chat interactions between users and AI agents. By design, the platform allows participants to OWN their infrastructure and data, ensuring full digital sovereignty. Moreover, contributors can EARN by providing bandwidth and running AI workloads on decentralized community nodes — forming a self-sustaining and incentivized network.

The platform's strategic tokenomics and participatory network model are crafted to cultivate a sustainable and vibrant ecosystem, inviting active involvement from developers, infrastructure providers, and end users alike.

Designed for business clients seeking reliable and future-ready RTC infrastructure, and for investors entering the frontier of decentralized AI-powered technology, dTelecom represents a new era in communication: secure, intelligent, user-centric, and driven by the principles of decentralization and community empowerment.

# 1. Introduction

As we enter the digital age, the proliferation of real-time communication technologies has become ubiquitous, reshaping how we connect, collaborate, and comprehend our world. The dTelecom network emerges as a vanguard in this digital evolution, introducing a decentralized infrastructure paradigm that promises to redefine the internet's real-time communication landscape.

Global video traffic currently dominates internet content, accounting for approximately 80% of all data transmitted across the Web, with projections indicating a steady increase [\[Cis21\]](#). This growing demand marks a critical inflection point for communication technology — one where traditional centralized solutions can no longer keep pace due to inherent limitations in scalability, security, and customization.

Centralized real-time communication platforms, while prevalent, impose significant constraints on data privacy, operational costs, and geographic latency. These systems operate within rigid, top-down architectures, often creating bottlenecks and vulnerabilities, especially as user numbers and data volumes surge. Additionally, the lack of adaptability in centralized models limits their effectiveness across industries such as gaming, education, and social media — all of which increasingly depend on responsive and real-time user interactions.

In stark contrast, dTelecom introduces a decentralized model that not only addresses these limitations but also champions a new ethos of digital communication. Leveraging blockchain technology, dTelecom orchestrates a network of independent node operators, ensuring data integrity, latency minimization, and democratized access to communication infrastructure. This architecture is inherently more resilient, distributing data across multiple nodes and mitigating single points of failure [\[Nak08\]](#).

Further enhancing this architecture is the integration of community-powered AI, which plays a critical role in optimizing real-time communication at scale. AI enables intelligent traffic routing, real-time speech processing, advanced media quality enhancement, noise suppression, content moderation, and seamless interaction between users and large language models (LLMs). This intelligent layer transforms dTelecom into more than just an infrastructure — it becomes a foundation for autonomous, adaptive, and context-aware communication.

To support its high-throughput, low-latency communication workloads, dTelecom is built on the Solana blockchain. Solana's ultra-fast execution layer, sub-second finality, and cost-efficient design make it the ideal foundation for a decentralized, AI-enhanced RTC network. This strategic choice ensures that dTelecom can scale globally while maintaining reliability, security, and seamless integration with the broader Web3 ecosystem.

Moreover, dTelecom's comprehensive SDK and API suite empowers developers and enterprises alike to build robust, real-time communication experiences — from live-streamed global events and multiplayer games to virtual classrooms and support systems. With dTelecom, every participant can:

- BUILD real-time voice, video, and chat interactions between users and AI agents;
- OWN their infrastructure, resources, and data;
- EARN token rewards by contributing bandwidth and compute power to the network.

This participatory model is reinforced by strategic tokenomics that incentivize stakeholders to support and expand the network. Contributors — whether node operators, developers, or users —

are rewarded for their engagement, forming a self-sustaining, inclusive, and dynamic communication ecosystem.

As we chart the course toward a more connected and decentralized digital future, dTelecom stands at the forefront — not simply building a platform, but cultivating a new digital commons where every participant is a stakeholder. Through our commitment to innovation, transparency, and community empowerment, we envision a world where secure, intelligent, and real-time communication is accessible to all.

## 2. Market Analysis

The landscape of real-time communication (RTC) technologies is undergoing unprecedented growth, propelled by the increasing demand for instant digital interaction across a wide spectrum of industries. In this dynamic environment, understanding current market trends, assessing the competitive landscape, and identifying emerging opportunities is essential for positioning dTelecom as a transformative force in the next generation of RTC.

This section outlines how dTelecom's decentralized, secure, AI-enhanced, and scalable infrastructure is uniquely suited to meet evolving communication demands — offering not just an alternative, but a paradigm shift in how RTC is delivered and experienced.

### 2.1 Current Market Trends

The global RTC market is on a strong upward trajectory. Key growth drivers include the widespread adoption of IoT devices, the increasing popularity of remote work, the expansion of virtual events, and the rising demand for interactive digital experiences. A report by Market Research Future [Mar21] forecasts significant growth in the RTC sector, underlining the critical role real-time communication plays in the modern digital ecosystem.

Feature/Service	dTelecom	Agora	LiveKit Cloud
Price	from \$0.00018/min from \$0.0048/GB	\$0.00399/min	\$0.18/GB
Subscription Model	Fixed monthly rate	Pay-as-you-go	Pay-as-you-go
Free Tier Availability	50 Mbps bandwidth per month ( $\infty$ min/ $\infty$ GB)	10,000/min per month	50/GB per month
Scalability	Designed for scalability with cost- efficiency	Scalable, but costs increase	Scalable, but costs increase
Management	DePIN	Centralized	Centralized
Code Type	Open source	Closed source	Open source
Node Launch <sup>1</sup>	Yes	No	No
Integration Cost Coverage <sup>2</sup>	Yes	No	No
Payment Method	Crypto/Fiat	Fiat	Fiat

Table 1: Comparison of Features and Services between dTelecom, Agora, and LiveKit Cloud

---

<sup>1</sup> Clients can operate their own nodes within the network, contributing to enhanced security and scalability while earning rewards for maintaining infrastructure.

<sup>2</sup> Integration support includes developer assistance to accelerate the deployment of dTelecom's solution within the client's product environment.

## 2.2 Competitive Landscape

### Web2 Providers

Traditional platforms such as LiveKit Cloud [CLo] and Agora offer scalable cloud-based RTC services. However, their centralized architecture introduces challenges around data ownership, customization, and cost-efficiency as scale increases. These solutions are often constrained by fixed infrastructures that lack transparency, flexibility, and resilience — making them less suitable for next-generation, decentralized use cases.

### Web3 Approach

While decentralized communication is an emerging category, many solutions in the Web3 space are still in early development stages or tailored to niche use cases. dTelecom differentiates itself by offering a mature, production-ready Decentralized Physical Infrastructure Network (DePIN) for real-time communication — optimized for performance, reliability, and composability.

dTelecom's infrastructure is purpose-built to support multiple high-demand verticals such as gaming, live commerce, EdTech, and social applications. With native AI integration, customizable SDKs, and a token-incentivized model, dTelecom provides developers and enterprises with the tools to build advanced communication experiences that go beyond what centralized or experimental platforms can deliver.

## 2.3 Target Market Segments

dTelecom is strategically positioned to serve a range of high-growth verticals, including:

- GameFi & Metaverse — Require ultra-low-latency, high-throughput, and interactive RTC environments to ensure immersive experiences.
- Social Applications — Benefit from flexible, community-driven infrastructure and AI-based moderation.
- EdTech Platforms — Demand scalable and privacy-preserving RTC tools for dynamic, engaging remote learning.
- Decentralized Support Systems — Need reliable and user-owned infrastructure for real-time agent and AI-assisted communication.
- Livestreaming & Live E-Commerce — Depend on real-time, stable, and scalable video delivery to support large-scale audiences, real-time interaction, and monetization workflows, particularly in global markets with diverse network conditions.

These sectors are inherently dynamic and data-intensive, making dTelecom's decentralized and AI-optimized architecture an ideal fit for long-term scalability and resilience.

## 2.4 Strategic Positioning

By harnessing the principles of decentralization, community participation, and AI-driven optimization, dTelecom introduces a new standard for how RTC infrastructure is conceived and delivered. In a market where data sovereignty, cost control, and flexibility are becoming non-negotiable, dTelecom offers a future-proof solution that puts control back into the hands of developers and users.

Backed by DePIN architecture, a robust economic model (BUILD · OWN · EARN), and full-stack developer tooling, dTelecom is positioned not just to compete — but to redefine the category.

### 3. Technical Overview

dTelecom stands at the forefront of decentralized real-time communication, leveraging cutting-edge technologies and innovative architectural design to deliver a robust, secure, and scalable infrastructure. This section outlines the key technical components and methodologies that define the dTelecom network — illustrating how it transcends traditional communication frameworks to offer a next-generation solution.

The platform's architecture is a convergence of decentralized infrastructure, blockchain integration, advanced SDK/API toolkits, and strategic technology partnerships. Through continuous innovation and a deep commitment to the transformative potential of blockchain, dTelecom is actively reshaping the paradigms of digital communication.

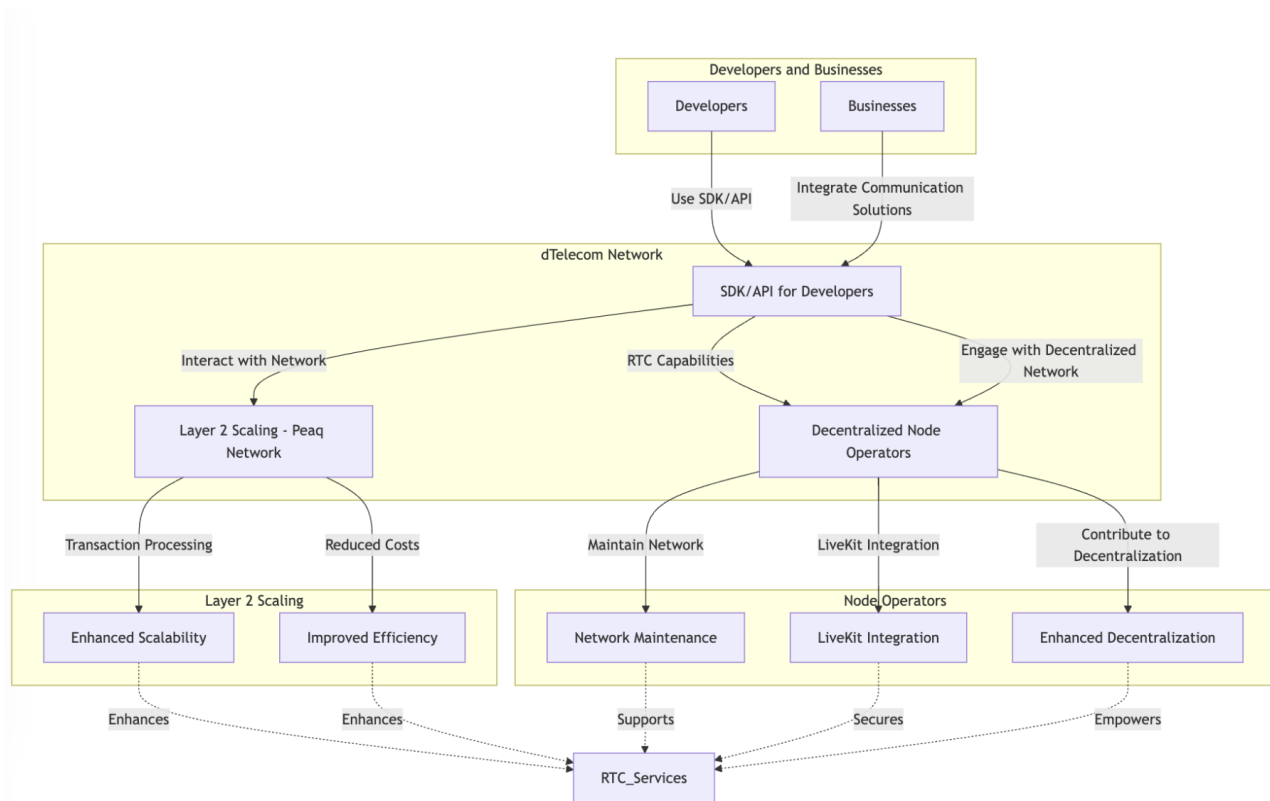


Figure 1: Technical architecture

#### Decentralized Infrastructure

At the heart of dTelecom lies a decentralized infrastructure — a fundamental departure from conventional centralized RTC networks. While traditional models route data through fixed servers and centralized exchanges, dTelecom distributes communication flows across a global network of independently operated nodes.

This architecture enhances network resilience, boosts data privacy, and significantly reduces latency by dynamically routing traffic through geographically nearest nodes. The result is an elevated real-time communication experience, particularly in latency-sensitive applications such as video conferencing, streaming, and voice calls [\[BMC+15\]](#).

dTelecom's infrastructure is anchored on blockchain technology, providing a transparent, secure, and verifiable foundation for network operations, governance, and token-based economics. Smart contracts enforce rules for participation, rewards, and dispute resolution, instilling trust and accountability across the ecosystem [NC16].

dTelecom is actively building on the Solana blockchain, leveraging its ultra-fast, low-latency infrastructure to support decentralized real-time communication at scale. Solana's architecture — known for high throughput, sub-second finality, and low fees — provides the ideal environment for handling latency-sensitive voice, video, and data streams.

As a recognition of its vision and potential, dTelecom has been awarded a grant from the Solana Foundation, further validating its role within the broader Solana ecosystem. This collaboration opens up strategic opportunities for dTelecom to integrate more deeply with Solana-based tools, DePIN infrastructure, and developer platforms.

The vibrant and fast-growing Solana ecosystem — spanning DeFi, AI, social, gaming, and infrastructure projects — offers a strong foundation for network adoption, partnerships, and scalability. With Solana as its blockchain layer, dTelecom is well-positioned to become the communication backbone for both human and AI-driven interactions across Web3 and beyond.

## **SDK / API Layer**

dTelecom provides a full-featured SDK and API layer, empowering developers to integrate real-time voice, video, and chat into their applications with minimal overhead. This abstraction layer hides the complexity of the decentralized backend while exposing flexible and powerful tools for building communication experiences.

The SDK mimics the familiarity and structure of centralized RTC toolkits, but with the added advantages of decentralization — improved data privacy, user ownership, and independence from centralized gatekeepers.

Importantly, the SDK/API layer will also include a suite of AI-powered features, available natively to developers, enabling them to rapidly build intelligent and context-aware communication tools. These AI features include:

- Real-time speech-to-text (STT) and text-to-speech (TTS) capabilities
- Voice enhancement, such as noise suppression and echo cancellation
- Real-time translation for multi-language conversations
- AI-based moderation of voice and video content, which can be performed directly at the DePIN node level to detect and filter harmful or policy-violating behavior in real time
- Integration with large language models (LLMs) for building interactive AI agents

These tools are designed to accelerate the development of advanced communication scenarios, including voicebots, live transcription, multilingual streaming, automated moderation, and human-AI collaboration.

dTelecom strategically builds upon the proven LiveKit open-source platform for audio and video communication, extending its capabilities into a decentralized framework. This integration allows developers to benefit from LiveKit's mature feature set while gaining all the decentralization advantages — including resilience against single points of failure, compliance with data sovereignty requirements, and community-owned infrastructure governance.

### **3.1 Solana Blockchain Integration**

#### **High-Performance Layer for Real-Time Communication**

dTelecom leverages Solana's high-speed blockchain infrastructure to achieve:

- Ultra-high throughput for handling real-time communication metadata
- Sub-second finality and low fees for efficient network operations
- Scalable smart contract execution for RTC logic and microtransactions

#### **Solana Ecosystem Synergy**

Solana's rapidly growing ecosystem enables dTelecom to integrate with:

- Decentralized identity and authentication protocols
- Web3-native DePIN services and edge computing layers
- Cross-application composability across DeFi, social, and infrastructure primitives

#### **AI-Ready Architecture**

dTelecom benefits from Solana's technical stack by enabling:

- Low-latency coordination between AI modules and RTC nodes
- Token-gated access to AI and communication resources
- On-chain automation of user permissions, rewards, and moderation logic

#### **Grant-Funded Development & Ecosystem Support**

dTelecom has received a grant from the Solana Foundation, ensuring:

- Long-term alignment with Solana's strategic priorities
- Access to technical advisory and core ecosystem support
- Co-marketing and visibility within the Solana developer community

#### **Integration Risk Mitigation**

dTelecom applies best practices to ensure stable integration with Solana:

- Continuous compatibility monitoring across runtime and tooling updates
- Cross-chain bridge security assessments and fallback strategies
- Modular architecture for future-proofing and scalability



## 4. Product Offering

dTelecom introduces a suite of products designed to revolutionize real-time communication by harnessing the power of decentralized infrastructure and community-powered AI. Our offerings cater to a broad spectrum of industries, providing the tools to integrate cutting-edge communication solutions while ensuring unparalleled data privacy, cost efficiency, and AI-enabled intelligence.

### 4.1 Comprehensive SDK and API Suite

Our core product is the dTelecom SDK/API suite — an advanced, modular toolkit that enables developers to seamlessly integrate or build real-time audio and video communication into their applications. Designed with flexibility and cross-platform support in mind, the SDK can be easily adapted to various programming environments and frameworks.

By leveraging dTelecom's decentralized architecture, developers gain access to:

- Improved performance and responsiveness via local node routing
- Native support for AI functions, such as speech recognition, translation, voice enhancement, and moderation
- Infrastructure that scales naturally with user demand, without reliance on centralized servers

### Data Privacy Advantage

In a digital landscape where data privacy is increasingly scrutinized, dTelecom offers a compelling alternative to centralized platforms. Our peer-to-peer, node-based model eliminates centralized storage points, significantly reducing the risk of large-scale data breaches.

Communication data is handled locally and securely, with end-to-end encryption. This architecture supports features such as jurisdiction-aware routing and optional on-premise deployment, giving developers and organizations greater control over where and how data flows.

Depending on the implementation and node configuration, dTelecom's infrastructure can help organizations align with data protection regulations such as GDPR and CCPA. However, final compliance is determined by each integrator's specific usage model and legal obligations.

### Cost Efficiency

dTelecom's decentralized infrastructure introduces a shared-cost model for delivering RTC services. Unlike centralized providers that rely on expensive cloud infrastructure and regional server farms, dTelecom distributes operational workloads across community-operated nodes.

This model reduces:

- Server maintenance and bandwidth overhead
- Costs related to scaling infrastructure during peak demand
- Dependency on third-party providers

Startups, SMEs, and emerging Web3 projects benefit from predictable pricing, lower entry barriers, and community-aligned economics, without sacrificing quality or performance.

## **Coming Soon: Modular Extensions**

dTelecom's product roadmap includes future-ready modules such as:

- Token-gated streams for exclusive content access
- Monetization integrations for live e-commerce and donation models
- Analytics dashboards for real-time usage and performance insights

These extensions will seamlessly plug into the SDK/API layer, further enhancing developer velocity and business value.

## **4.2 Node Operator Program**

An integral part of the dTelecom ecosystem is the Node Operator Program, which empowers individuals, organizations, and infrastructure providers to contribute to the network's operation by running decentralized nodes.

Participants play a vital role in ensuring the availability, performance, and security of the dTelecom infrastructure — and in return, they earn rewards for their contribution in the form of token-based compensation. This program not only decentralizes the network's backbone but also democratizes economic value, distributing it across a global base of active participants rather than centralized entities.

Node operators are responsible for:

- Hosting low-latency, high-availability RTC nodes
- Processing communication metadata and relaying encrypted media streams
- Optionally running AI workloads, such as moderation and voice processing
- Participating in governance and network health validation

## **Decentralized Infrastructure-as-a-Service (D-IaaS)**

Beyond SDK/API access, dTelecom offers Decentralized Infrastructure as a Service (D-IaaS) — a unique model that allows businesses and developers to consume real-time communication services through a distributed and usage-based infrastructure layer.

This service enables clients to:

- Tap into a global, latency-optimized node network
- Achieve high service reliability without owning physical infrastructure
- Customize resource usage based on location, traffic volume, and AI needs
- Scale dynamically and only pay for what they use

By separating compute, bandwidth, and AI inference layers into modular, on-demand services, dTelecom makes real-time communication infrastructure accessible to a much broader range of organizations — from startups to large enterprises — without the overhead of building or managing servers.

## **4.3 Future Product Expansions**

Looking ahead, dTelecom is committed to expanding its product offerings to serve industries with specialized, high-stakes communication needs. Future vertical solutions will focus on:

- Healthcare — enabling real-time doctor-patient communication with strong encryption and optional deployment models that can support HIPAA-aligned use cases. By offering on-premise nodes, jurisdiction-aware routing, and private network configurations, dTelecom provides a flexible foundation for healthcare providers seeking secure RTC infrastructure. Final compliance with HIPAA remains subject to each client’s architecture, usage model, and regulatory requirements.
- Education — delivering scalable, low-latency virtual classrooms and AI-assisted learning environments
- Entertainment & Streaming — supporting token-gated access, real-time audience interaction, and global content delivery
- Live E-commerce — combining real-time video, AI agents, and interactive UX for high-conversion shopping experiences

These expansions will leverage the foundational strengths of dTelecom’s architecture — decentralized infrastructure, edge-located nodes, and AI-native SDK tooling — to deliver advanced features such as:

- Content-aware AI moderation (for voice/video/chat)
- Seamless integration with LLMs and voicebots
- Dynamic edge routing based on audience distribution
- Customizable token-based access control for private or monetized streams

Combined with the Node Operator Program and token-powered incentives, this expansion strategy ensures that the network’s growth is aligned with both application demand and community participation.

dTelecom’s long-term vision is to set a new standard in decentralized communication infrastructure — one that unifies security, cost efficiency, and technological innovation. Our modular design approach enables the rapid rollout of future product layers without disrupting the core SDK/API stack, giving developers and businesses continuous access to the latest tools in decentralized real-time communication.

Benefits	Details
Initial Investment	Node operators are required to stake approximately \$10,000 worth of \$DTEL to activate a node. This stake represents a commitment to network reliability, incentivizes long-term participation, and aligns with the network’s economic security model.
Revenue Generation	Operators earn rewards by providing real-time communication services to clients. Usage payments are automatically converted into \$DTEL and distributed proportionally among active nodes based on performance and location.
Payment Discounts	\$DTEL can be used to access network services at a discounted rate, lowering operating costs for node operators who also act as clients or infrastructure resellers.

Market Positioning	dTelecom is designed to offer competitive or superior returns compared to existing centralized and decentralized RTC infrastructure providers, enhancing long-term viability for node operators.
Token Appreciation Potential	dTelecom's tokenomics model includes factors that support value growth — including fixed supply, increasing utility, and network usage incentives. As seen with similar tokens (e.g., \$LPT from Livepeer), increased engagement may lead to appreciation, benefiting active participants.
Fixed Token Supply and Burning	\$DTEL has a capped total supply with a built-in burn mechanism. A portion of protocol-level fees is burned, reducing supply over time and potentially increasing the value of tokens held or earned by node operators.
Geographical Node Strategy	Operators are incentivized to deploy nodes in high-demand, low-latency regions, optimizing quality of service and earnings. This strategy improves load balancing and aligns network performance with user distribution.
Performance and Capacity Audits	The network performs continuous checks on node uptime, throughput, and AI task handling, ensuring operators are compensated fairly and quality remains high. Underperforming nodes may be flagged, temporarily suspended, or rebalanced.
Risk Mitigation	The stake requirement, paired with geographical and ownership diversity, reduces the risk of collusion and service degradation. Operators retain the flexibility to exit or rebalance their stake, similar to miners in proof-of-work networks.

Table 2: Benefits of the Node Program

## 5. Tokenomics and Network Participation

dTelecom's tokenomics model is meticulously designed to support the decentralized infrastructure of the network, incentivize participation, and ensure long-term sustainability and growth. The \$DTEL token serves as the economic engine of the ecosystem, facilitating transactions, rewarding contributors, and enabling governance and utility features across the platform.

By aligning the interests of token holders, node operators, developers, and users, dTelecom fosters a decentralized and participatory network that is both economically sustainable and community-driven.

### 5.1 Token Utility and Distribution

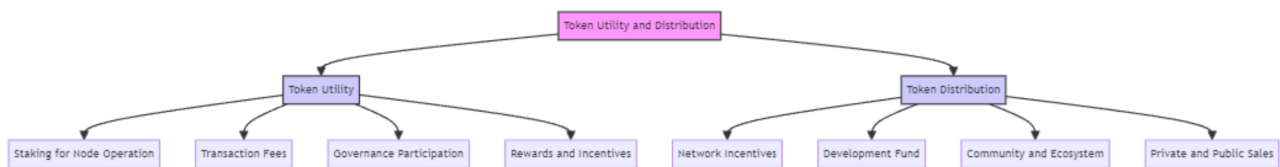


Figure 2: Token Utility

The \$DTEL token is designed with multiple core utilities, each aimed at enhancing the platform's functionality and encouraging long-term participation:

- **Node Operation and Staking:** To run a node, participants must stake \$DTEL tokens. This ensures that node operators have a vested interest in network performance and security. Staking also acts as a defense mechanism against malicious activity, with penalties applied to underperforming or dishonest nodes.
- **Transaction Fees:** \$DTEL is used to pay for services across the network, including real-time communication sessions, AI features, and infrastructure usage. These fees are competitively priced to encourage adoption while supporting protocol-level sustainability.
- **Governance:** \$DTEL holders have voting rights over protocol parameters, upgrades, treasury spending, and strategic decisions. This ensures that the direction of the network remains in the hands of its active participants.
- **Rewards and Incentives:** Contributors — including node operators, early adopters, and ecosystem builders — receive \$DTEL-based rewards proportional to their contributions, fostering an active and engaged community.

### Token Distribution

The initial allocation of \$DTEL tokens is structured to balance network growth, development needs, and community alignment:

- **Network Incentives:** A substantial share of the supply is reserved to reward node operators, stakers, and active participants who contribute to early adoption and long-term infrastructure stability.
- **Development Fund:** A portion of tokens is allocated to ongoing protocol development, product innovation, and research.
- **Community & Ecosystem:** Tokens are designated for community initiatives, partnerships, bounties, grants, and ecosystem expansion.

- **Private and Public Sales:** Strategic token sales provide funding for initial development and enable wide-based ownership across supporters and investors.

The initial distribution of \$DTEL tokens is strategically designed to support the network's growth and stability:

- **Network Incentives:** A significant portion of the total token supply is allocated to incentivize network participation, including rewards for node operators and early adopters.
- **Development Fund:** Tokens are reserved for ongoing development, ensuring that the dTelecom team can continue to innovate and enhance the platform.
- **Community and Ecosystem:** A dedicated allocation for community initiatives, partnerships, and ecosystem development helps foster a vibrant and supportive dTelecom community.
- **Private and Public Sales:** Portions of the token supply are distributed through private and public sales, providing initial funding for the network's development and allowing a broad base of investors to participate in the project.

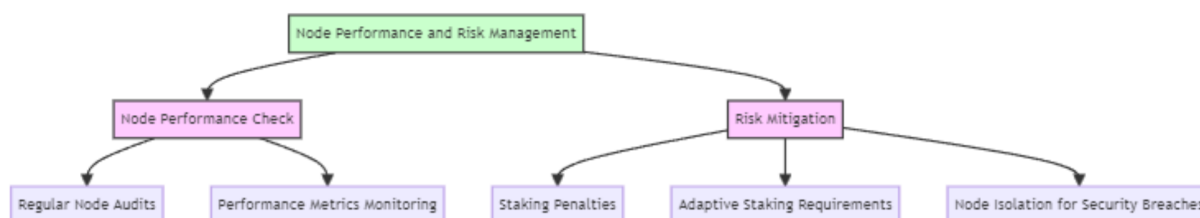


Figure 3: Risk mitigation

## 5.2 Node Operator Economics

Node operators form the backbone of the dTelecom network by hosting real-time communication infrastructure and, optionally, executing AI workloads. The token economics for operators are crafted to offer fair compensation and align long-term participation incentives:

- **Staking Rewards:** Operators receive regular rewards in \$DTEL for securing the network and maintaining operational uptime through active staking.
- **Transaction Fee Revenue:** A share of all transaction fees generated by communication traffic is distributed to nodes in proportion to their performance, availability, and regional demand coverage.
- **Penalty Mechanisms:** To uphold service quality, nodes that behave dishonestly or fail to meet technical standards may face slashing — the forfeiture of a portion of their staked tokens. This ensures high-performance standards across the network.

Together, these incentives create a performance-driven reward system that compensates those who contribute real value to the network.

## 5.3 Economic Stability and Growth Mechanisms

To support sustainable token value and long-term network resilience, dTelecom introduces a range of macroeconomic mechanisms:

- **Token Burn:** A portion of fees paid in \$DTEL is permanently removed from circulation through an automated burn process. This introduces deflationary pressure as network usage grows, potentially increasing the token's long-term value.

- **Dynamic Staking Requirements:** To adapt to changing network conditions, staking thresholds may be adjusted based on the number of active nodes, traffic volume, and decentralization targets. This keeps participation accessible while maintaining network security.
- **Treasury and Reserve:** A governed treasury holds a portion of the token supply in reserve. These funds can be used to stabilize the token economy, support liquidity, back strategic partnerships, and provide a safety net during market volatility. All treasury actions are subject to governance proposals and community approval.

dTelecom's tokenomics are not only a financial layer, but a mechanism for reinforcing the principles of decentralization, fairness, and long-term alignment between infrastructure providers, developers, and users. The result is a self-sustaining, incentivized ecosystem capable of scaling with global communication needs.

## 6. Financial Overview

The financial framework of dTelecom is strategically engineered to ensure long-term sustainability, capital efficiency, and value creation for all stakeholders. This section outlines the project's funding trajectory, token generation plans, and capital allocation strategy — all structured to support the mission of building the world's first decentralized real-time communication (RTC) network powered by DePIN and AI.Y

By aligning its financial roadmap with key product milestones and market expansion goals, dTelecom establishes a strong economic foundation for scaling the network, incentivizing participation, and ensuring continued innovation.

Aspect	Detail	Comments
Revenue Potential	\$1,540 per client monthly	High revenue potential from a growing and scalable user base.
Hosting and Operational Costs	Up to \$556/month in hosting and operations; includes ~20% allocated for ongoing expenses and infrastructure maintenance.	Efficient cost structure ensures healthy profit margins and sustainable long-term operations.
Competitive Pricing	Subscription model with unlimited minutes and bandwidth; enables customers to save up to 95% compared to traditional RTC providers.	Aggressive pricing strategy supports rapid adoption, market penetration, and expanded user acquisition.
Token Economics	75% of revenue distributed to node operators; 5% allocated for token burn; 20% used for platform operations and development.	Token value strengthened by utility, deflationary mechanics, and aligned incentives — enhancing appeal for stakeholders.
Market Positioning	More cost-effective and scalable than centralized competitors like Agora and LiveKit.	Strong differentiation enables dTelecom to capture meaningful share in the RTC infrastructure market.
Long-Term Growth	Designed to support high volumes of concurrent users with minimal latency, ensuring global scalability across industries.	Infrastructure supports exponential user growth, reinforcing the investment case and long-term economic sustainability.

Table 3: Implications of dTelecom's Economic Model



## 6.1 Funding Rounds

dTelecom has structured its capital formation strategy around progressive funding rounds, each designed to support critical phases of development and ecosystem growth.

- **Pre-Seed Round:** The project successfully completed its pre-seed funding round, raising \$400,000. These funds were allocated to early-stage product development, protocol architecture, core team expansion, and initial network deployment.
- **Private Round (upcoming):** dTelecom plans to raise an additional \$800,000 in a private round. This raise targets strategic investors with industry expertise and ecosystem alignment. Proceeds will be used to accelerate product refinement, expand the global node network, and launch go-to-market campaigns in preparation for broader adoption.

Each round is structured to balance capital efficiency with strategic value, bringing on partners who can contribute beyond capital — including technical infrastructure, developer networks, and go-to-market support.

## 6.2 Token Generation Event (TGE)

Scheduled for Q3 2025, the Token Generation Event (TGE) marks a pivotal shift from development to scaled deployment and decentralization. The TGE will introduce the \$DTEL token to the public, enabling broader community participation, network bootstrapping, and token liquidity.

### TGE Goals and Allocation

The TGE is expected to:

- Raise additional capital for ecosystem scaling
- Distribute tokens to community members, node operators, and strategic supporters
- Enable governance onboarding and token-based utility activation

A transparent token distribution model will outline the percentages allocated to:

- Community Incentives (e.g., node rewards, early participation programs)
- Development and Treasury Reserves
- Team and Advisors (with vesting)
- Public Sale and Strategic Partnerships

### Fund Allocation from TGE

Proceeds from the TGE will be strategically deployed across:

- **Network Development:** Enhancing protocol scalability, security, and performance
- **Infrastructure Expansion:** Scaling decentralized nodes across strategic global regions
- **Marketing & Ecosystem Growth:** Driving adoption, awareness, and community engagement
- **Operations & Reserves:** Ensuring long-term stability, payroll, legal, and treasury planning

These allocations reflect a long-term focus on decentralization, adoption, and sustainability.

### 6.3 Financial Projections and Sustainability

While exact financial projections will evolve with market conditions, dTelecom is committed to building a self-sustaining, revenue-generating network supported by transparent and disciplined financial management.

Key Financial Pillars:

- **Revenue Streams:** dTelecom will generate revenue from transaction fees on the network and usage of premium features via the SDK/API (including AI-based services). These revenues will directly support protocol growth and ongoing node incentives.
- **Capital Efficiency:** Expenditure is tightly aligned with measurable milestones, ensuring that each dollar raised contributes directly to value creation and user growth.
- **Long-Term Resilience:** A portion of raised funds and protocol earnings will be allocated to a financial reserve and protocol treasury, governed by the community. This reserve supports volatility management, ecosystem grants, and future growth investments.

By combining disciplined cost control with scalable revenue channels and a deflationary token model, dTelecom aims to build a financial engine capable of supporting its decentralized infrastructure for the long term.

## 7. Legal and Compliance

In today's rapidly evolving digital landscape, real-time communication platforms face increasing regulatory scrutiny—particularly in areas such as data privacy, cross-border data flows, financial compliance, and telecommunications. While centralized systems often struggle to meet the demands of diverse jurisdictions, dTelecom's decentralized architecture is uniquely positioned to navigate these challenges more flexibly.

dTelecom's legal and compliance framework is built to uphold global standards, mitigate regulatory risks, and foster trust across all participants. By combining proactive legal engagement with adaptive operational design, dTelecom seeks to set a new benchmark for regulatory compliance in the decentralized communication space.

### 7.1 Adherence to Global Regulatory Standards

dTelecom operates in an environment of intensifying global regulation, particularly in relation to data protection, cybersecurity, and financial transparency. The project takes a jurisdiction-aware approach to compliance, ensuring that its infrastructure and economic model are compatible with evolving legal norms across key markets.

#### Data Privacy and Protection

dTelecom is committed to upholding robust data privacy standards. The network's architecture is designed to respect user data sovereignty, with no centralized storage or surveillance points. This aligns naturally with leading global regulations such as the General Data Protection Regulation (GDPR) in the EU and CCPA in the United States.

Where needed, dTelecom enables developers and clients to deploy custom configurations or regional nodes that facilitate compliance with data localization requirements.

#### Anti-Money Laundering (AML) and Counter-Terrorism Financing (CFT)

Although dTelecom is not a financial institution, the tokenomics layer involves the transfer of digital assets, which brings certain regulatory obligations. dTelecom will implement AML/CFT measures consistent with international best practices, such as FATF guidelines, and will ensure that token-related activity remains transparent, auditable, and free from abuse.

### 7.2 Intellectual Property Rights

Innovation and open collaboration are foundational to dTelecom's mission. The project respects all intellectual property laws and seeks to balance IP protection with open-source contributions:

- All proprietary technologies developed by dTelecom are protected where applicable
- Contributions to the open-source ecosystem are vetted to ensure non-infringement
- Any third-party components used are licensed and attributed in accordance with legal standards

This strategy ensures that innovation, transparency, and compliance can coexist harmoniously.

### 7.3 Compliance with Telecommunications Regulations

As a provider of real-time communication infrastructure, dTelecom intersects with various telecommunication laws that may apply to voice, video, and messaging services.

- The project will monitor regulatory frameworks in regions where services are offered
- Operational adjustments will be made to comply with local telecom licensing, if necessary
- dTelecom will engage with regulatory bodies to advocate for innovation-friendly and decentralized-compatible communication laws

By staying ahead of regulatory expectations, dTelecom aims to build a globally compliant RTC stack.

## **7.4 Legal Challenges for Decentralized Networks**

Decentralized networks introduce legal complexity, particularly in jurisdictional scope, responsibility attribution, and enforcement of rights. dTelecom takes a proactive and structured approach to navigating these complexities.

### **Jurisdictional Analysis**

Given its global scope, dTelecom conducts ongoing legal analyses to map its operations against the frameworks of key jurisdictions. This includes assessing compliance risks related to:

- Data sovereignty and privacy
- Crypto-asset regulation
- Cross-border communications
- Hosting and local content requirements

### **Dispute Resolution**

Despite the decentralized nature of the platform, dTelecom is committed to enabling clear, fair, and transparent dispute resolution mechanisms. These include:

- On-chain governance frameworks for protocol-related proposals and disputes
- Off-chain processes (via arbitration or mediation) for business or user-related issues
- Escrow and staking-based guarantees for node operators and service providers

This hybrid model ensures users and partners have recourse in the event of conflict, strengthening the project's legal integrity.

## **7.5 Continuous Legal Monitoring and Adaptation**

As digital asset and communication laws evolve, dTelecom commits to continuous legal monitoring and risk management:

- Engaging expert legal counsel across key jurisdictions
- Participating in policy discussions around decentralized technology and DePIN infrastructure
- Proactively adapting internal policies and smart contracts in response to regulatory updates

This forward-thinking legal strategy ensures that dTelecom remains resilient, adaptive, and legally sound as it scales globally.

## **8. Summary**

As the world enters a new era of digital interconnectivity, dTelecom emerges as a pioneering force — reshaping the landscape of real-time communication through a decentralized, AI-enabled, and community-powered platform. By combining technical innovation with a strategic economic model,

dTelecom offers unmatched value for business clients, investors, and an engaged global community of users and contributors.

This summary highlights how dTelecom delivers tangible benefits across the ecosystem — unlocking new efficiencies for enterprises, enabling ownership-driven participation, and creating sustainable, long-term opportunities for all stakeholders.

## **For the Community**

The heart of dTelecom lies in its global community of contributors — node operators, users, developers, and advocates who help power the network and benefit from its growth.

dTelecom is designed not just to serve end users, but to empower them as participants in the infrastructure itself. Anyone can host nodes, contribute bandwidth, moderate conversations, and interact with AI-driven experiences — all while earning rewards for their contributions.

Key benefits for the community include:

- **Earn by Participating:** Community members can earn \$DTEL by contributing resources, hosting nodes, or engaging with applications built on dTelecom.
- **Own the Infrastructure:** Rather than relying on centralized intermediaries, users help operate and govern the network — reclaiming control over how communication infrastructure is built and maintained.
- **Use the Platform:** From secure one-on-one calls to large-scale livestreams, users of dTelecom-powered apps enjoy private, low-latency, AI-enhanced communication — with full transparency and without intrusive data collection.

dTelecom is building a platform where value flows directly to those who contribute, not to centralized corporations — creating a new internet ownership model based on fairness, transparency, and shared purpose.

## **For Business Customers**

dTelecom offers a next-generation communication platform designed to meet the demands of modern enterprises — prioritizing security, privacy, flexibility, and cost efficiency.

By integrating dTelecom's modular SDK/API, businesses gain access to a scalable decentralized network that enables superior communication performance, reduced latency, and full control over data — without the limitations of centralized infrastructure.

Key benefits for business clients include:

- **Data Privacy and Sovereignty:** With no centralized data storage or vendor lock-in, dTelecom ensures that business communications remain secure, compliant, and under your control — aligning with global privacy frameworks such as GDPR and CCPA.
- **Operational Cost Reduction:** Decentralized infrastructure eliminates the need for expensive server maintenance and centralized service fees, delivering meaningful savings while improving service reliability.
- **AI-Powered Innovation:** Native support for real-time translation, speech recognition, moderation, and LLM integrations empowers businesses to create intelligent, user-centric communication tools that scale with demand.

Whether you're building in EdTech, GameFi, customer support, or live commerce, dTelecom provides the infrastructure to elevate engagement, security, and performance.

## **For Investors**

Investing in dTelecom means supporting the next layer of the internet's infrastructure — one built on decentralization, transparency, and programmable economic alignment.

With a working product, growing developer adoption, and a strategic roadmap toward global scale, dTelecom represents a high-potential opportunity in one of Web3's most promising verticals: real-time communication.

Key investment highlights:

- **Massive Market Opportunity:** As demand for decentralized and privacy-compliant RTC solutions accelerates, dTelecom is well-positioned to capture market share and lead the DePIN-powered RTC movement.
- **Sustainable Tokenomics:** The \$DTEL token is central to network operation, incentivizing participation while enabling value capture through staking, governance, utility, and deflationary mechanics.
- **Experienced, Committed Team:** Backed by a seasoned founding team and supported by the Solana ecosystem, dTelecom is built with a long-term vision and operational excellence at its core.

## **Final Thoughts**

dTelecom is more than a protocol — it is:

- A strategic communication solution for enterprises
- A next-generation investment opportunity for visionaries
- And a community-owned infrastructure for everyone who values freedom, privacy, and performance in digital communication

By choosing dTelecom, you align with a future where communication is decentralized, intelligent, secure, and accessible to all.

We invite developers, businesses, node operators, users, and investors to join us in building the new global standard for real-time communication — where ownership is distributed, performance is optimized, and opportunity is shared.

Together, let's shape the future of communication.

## 9. Appendix

### 9.1 Executive Summary

In an era where digital communication underpins global interaction, dTelecom introduces a paradigm shift through its decentralized real-time communication (RTC) network — designed to bring security, scalability, and transparency to a space long dominated by centralized infrastructure.

At its core, dTelecom deploys a Decentralized Physical Infrastructure Network (DePIN) that powers audio, video, and chat experiences across applications and platforms. Through this architecture, we address key limitations of existing web2 solutions — offering a scalable and censorship-resistant alternative for developers, businesses, and end users.

To enable widespread adoption, dTelecom delivers a powerful Software Development Kit (SDK) and Application Programming Interface (API) suite. These tools empower builders to easily integrate live video, voice, and interactive AI agents into their applications — whether it's live streaming, conferencing, audio spaces, or on-demand chatbots. Beyond embedding RTC functionality, our SDK comes with native AI capabilities, including speech recognition, moderation, translation, and real-time interaction with large language models (LLMs).

Unlike traditional cloud-based RTC providers, dTelecom's model is built on three core principles:

- **BUILD** — Give developers the freedom to integrate modular, AI-enhanced communication
- **OWN** — Let users and node operators maintain control over data and infrastructure
- **EARN** — Enable contributors to generate revenue by providing compute, bandwidth, or AI capacity

We stand not only as a decentralized alternative to providers like LiveKit Cloud, but as a next-generation evolution of the RTC stack — with deeper ownership, better incentives, native AI support, and lower operational costs.

The network is anchored on Solana, selected for its ultra-low latency, high throughput, and developer-friendly ecosystem. Solana's performance is critical for powering latency-sensitive real-time experiences, while also enabling token economics that reward node operators and active participants.

Our token model is designed to reinforce ecosystem growth:

- **\$DTEL** serves as the access key, governance instrument, and reward currency of the protocol
- Staking requirements ensure alignment and commitment from node operators
- A deflationary mechanism, driven by burn events and limited supply, promotes long-term sustainability

dTelecom is not just launching an infrastructure layer — it's pioneering a movement to democratize digital communication. We envision a future where users not only consume communication services but participate in running them — earning from their contributions and shaping the rules through governance.

We invite builders, node operators, developers, and investors to join us in shaping the next standard for real-time communication — one that is secure, intelligent, scalable, and owned by its community.

## 9.2 Penalty Workflows

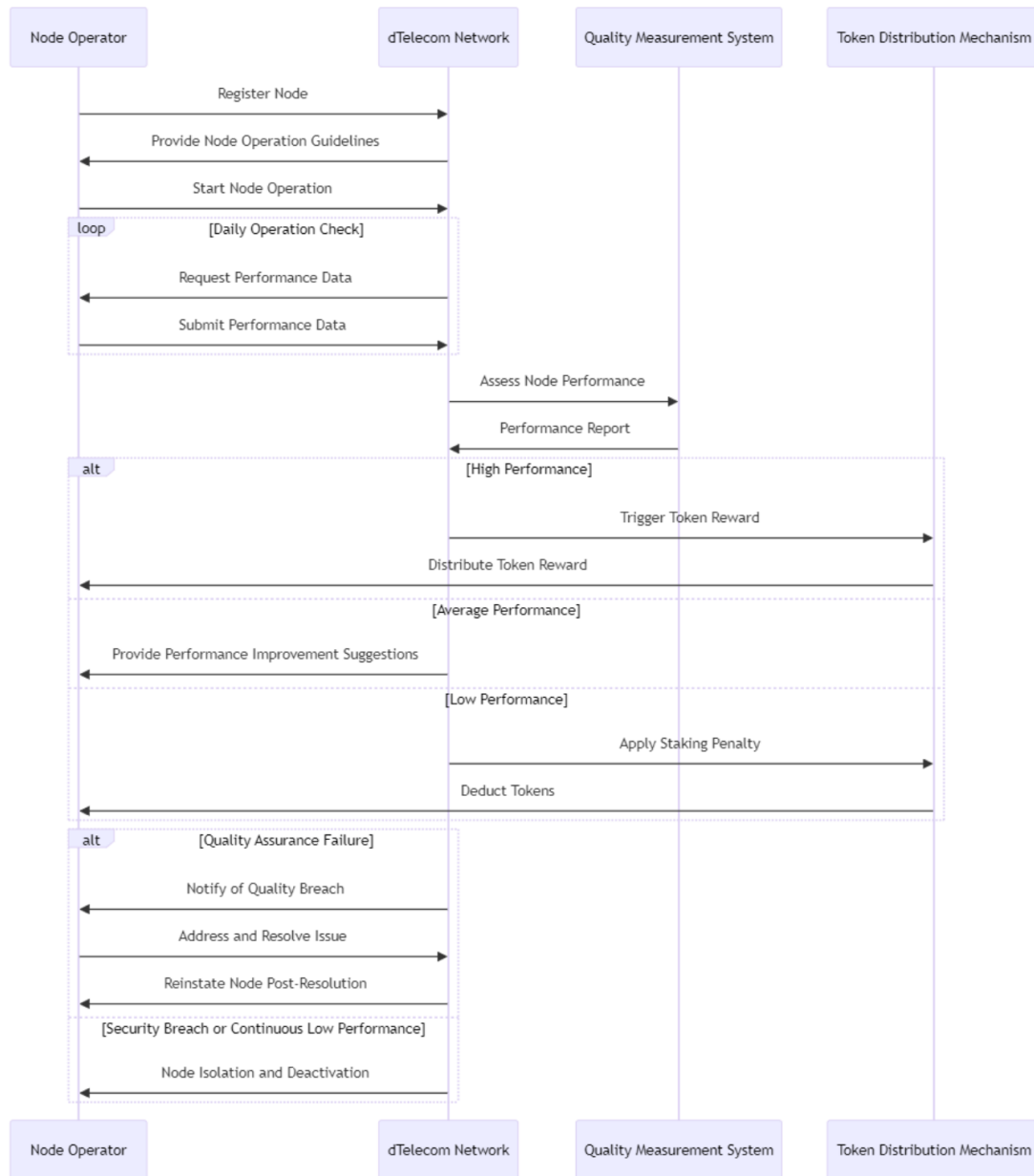


Figure 5: Quality based node penalties



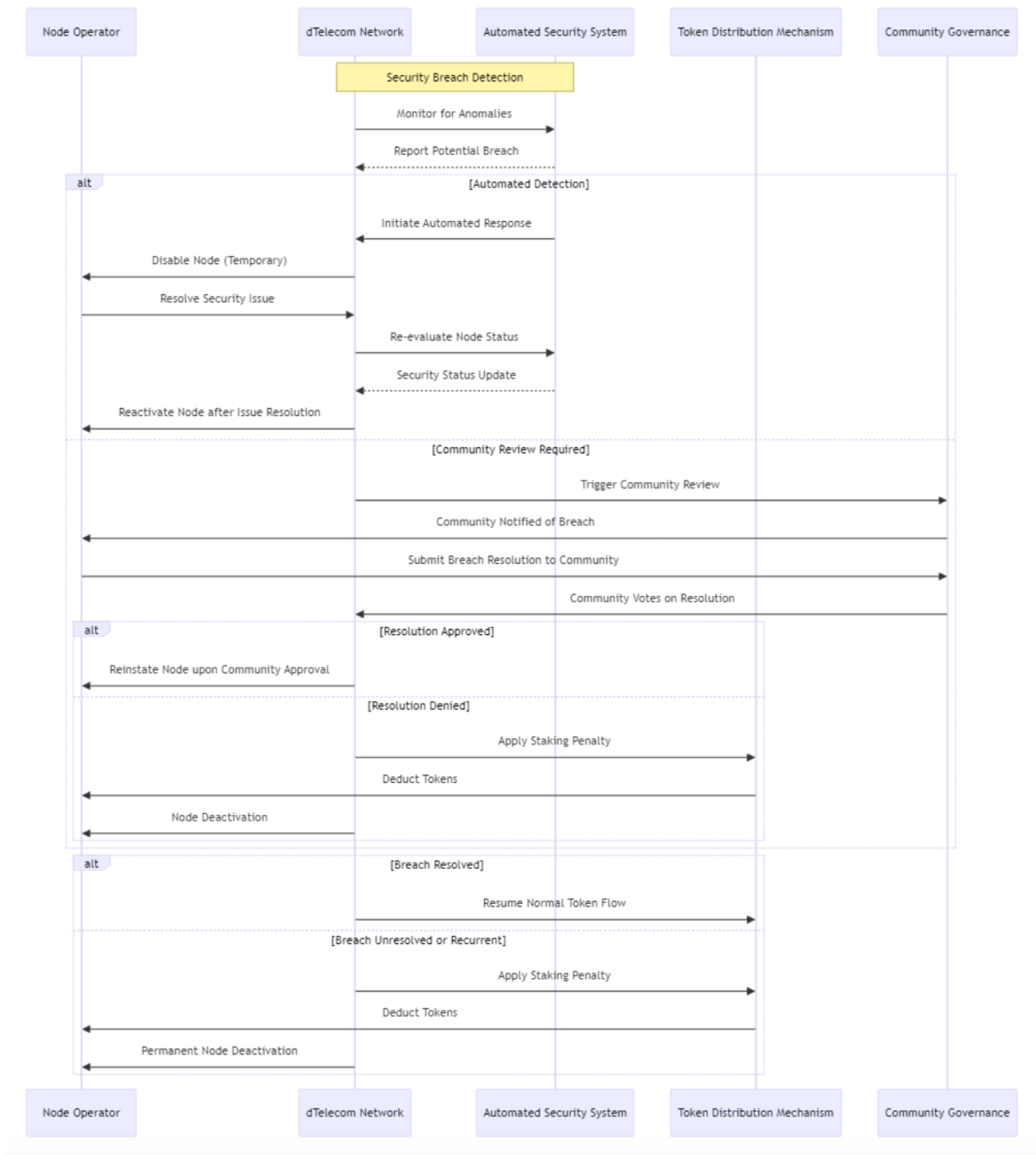


Figure 6: System breach based protection

## 10. References

[BMC+15] J. Bonneau, A. Miller, J. Clark, A. Narayanan, J. A. Kroll, and E. W. Felten. *SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies*. In *2015 IEEE Symposium on Security and Privacy*, 2015.

[Cis21] Cisco. *Cisco Annual Internet Report (2018–2023) White Paper*, 2021.

[CLo] LiveKit Cloud. *LiveKit — Real-Time Audio and Video in Your App*.

[Mar21] Market Research Future. *Real-Time Communication Market Research Report — Global Forecast till 2027*, 2021.

[Nak08] S. Nakamoto. *Bitcoin: A Peer-to-Peer Electronic Cash System*, 2008.

[NC16] A. Narayanan and J. Clark. *Bitcoin’s Academic Pedigree*. *ACM Queue — Blockchain Technology*, 2016.