

AptosRoom: The Decentralized Talent Ecosystem

Project Overview & Concept Architecture

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1. Executive Summary

AptosRoom is a next-generation decentralized talent layer engineered for the Aptos blockchain. Traditional freelance platforms rely heavily on intermediaries, trust, and manual review. AptosRoom eliminates these inefficiencies by replacing human moderation with programmable, trustless on-chain systems.

AptosRoom functions as a **trustless digital workspace** — a “Room” — where payments, reputation, and quality verification are governed by code, not by centralized administrators.

The platform’s mission is simple:

Reveal talent.

Value the work.

Reward the contribution — with certainty.

Built with the Move programming language, AptosRoom ensures that engagements are enforced cryptographically, not socially.

2. The Problem: The Trust Gap

Current Web3 talent platforms still behave like Web2 marketplaces. They inherit the problems of centralized intermediaries:

- **Payment Risk**

Contributors often face non-payment or delayed payment because funds depend on goodwill rather than code.

- **Centralized Gatekeeping** Task verification is usually controlled by a centralized admin team — slow, biased, and opaque.

- **Siloed Reputation**

A contributor's earned credibility cannot move across platforms.

Your “reputation” is locked where you worked.

Web3 should fix this. Yet it hasn't.

AptosRoom changes this.

3. The Solution: The “Room” Architecture

AptosRoom replaces the “Middleman” with the **Engine** — a fully on-chain architecture built on Move.

The platform runs on **three decentralized layers**:

3.1. The Vault (Financial Layer)

Concept: Trustless Escrow

- Funds are instantly locked in a Room-specific Move module once a task is opened.
- Funds cannot be reclaimed, misused, or frozen arbitrarily.
- When verification is completed, **the Vault releases payment instantly and automatically**. This eliminates wage theft, payment delays, and manual disputes.

3.2. The Jury (Verification Layer)

Concept: Decentralized Quality Control

- A pool of token-staked community members are randomly selected to review submissions.
- Jurors are rewarded for accurate assessments.
- Malicious jurors are **slashed**, ensuring honest participation.
- No centralized reviewer. No delays.

This creates a **transparent, fair, community-driven verification process**.

3.3. The Keycard (Identity Layer)

Concept: Portable Proof-of-Work

- Each successful task mints an immutable credential on the Aptos ledger.
- These credentials form the **Keycard**, a decentralized on-chain identity of skills, trust, and performance.
- The Keycard is **portable across all of Web3** — not tied to AptosRoom's UI. Your work becomes your Web3 identity.

4. The Core Engine: Dual-Key Consensus

Dual-Key Consensus ensures that no task is completed based on only one opinion — neither the client nor the jury can dominate.

A task is marked complete only when **two keys unlock the Vault**:

Gold Key (Client Satisfaction)

Weight: **60%**

Represents whether the work meets expectations and vision.

Silver Key (Jury Technical Review)

Weight: **40%**

Ensures code quality, security, and correctness.

Final Score

Final Score = (Client × 0.60) + (Jury × 0.40)

This blended consensus protects both parties.

Winner Selection

After all contributors submit:

The highest Final Score is automatically the winner

Second highest is 2nd place

Third highest is 3rd place

And so on...

This removes bias, favoritism, and human interference.

Dual-Key Consensus Outcome Table

Contributor	Client	Juries (peer review)	Final Score	Rank
C	80	50	68	1st (Winner)
A	55	35	47	2nd
B	40	40	40	3rd

5. Security Architecture:

To ensure the Dual-Key Consensus remains trustless and resistant to attacks, AptosRoom implements three advanced cryptographic safeguards.

5.1 Reputation-Gated Randomness (Sybil Resistance)

The Problem: Standard token-staking is vulnerable to "Sybil Attacks," where a wealthy attacker floods the jury pool with multiple wallets.

The Solution:

AptosRoom utilizes Reputation-Gated Randomness. Money alone cannot buy influence.

- Proof of Skill: Jury eligibility is filtered by the Keycard. To judge a task (e.g., Move Smart Contracts), the juror's Keycard must prove they have successfully *completed* relevant tasks.
- Verifiable Randomness: From this qualified pool, the protocol uses the 0x1::randomness module (native to Aptos) to un-biasably select the final jurors.

5.2 Commit-Reveal Consensus (Voting Integrity)

The Problem: Public voting allows lazy jurors to copy the scores of early voters, reducing the accuracy of the review.

The Solution:

We implement a Commit-Reveal scheme combined with Schelling Point incentives.

1. Commit: Jurors submit a hash of their score (Salt + Score) to the chain. This records the vote without revealing the value.
2. Reveal: Once voting closes, jurors reveal their salt to unlock the score.
3. Consensus: Jurors who vote within the standard deviation of the Median Score are rewarded. Extreme outliers (e.g., voting 0 when the median is 90) are flagged. Three consecutive flags result in the slashing of staked tokens.

6. Strategic Advantage: Why Aptos?

Aptos is suited for a decentralized talent ecosystem:

- **Move's Resource Model**

Ensures funds cannot be duplicated, lost, or mishandled — perfect for trustless escrow.

- **High Throughput**

Jury voting, Vault settlement, and Keycard minting happen **nearly instantly**.

- **Developer-Friendly**

Move ABI + Aptos SDK support fast integration with dApps, wallets, or L2 identity layers.

AptosRoom becomes the **trust infrastructure layer** for the Aptos workforce.

7. Mission Statement

AptosRoom is where talent is Revealed, work is Valued, and contributions are Rewarded with absolute certainty.

We are building the transparent, trust-driven talent infrastructure for the Aptos ecosystem — a decentralized, programmable workforce layer powered entirely by smart contracts.