

Executive Summary

What is Escrow in AI TrustTrade?

Escrow is a financial arrangement where AI TrustTrade acts as a trusted third party, holding and regulating payment funds between consumers and service providers. Funds are secured in a BSP-compliant trust account from the moment of booking until service completion is verified, ensuring both parties are protected against non-payment and non-delivery risks.

Core Principle: 100% of service transactions go through mandatory escrow. Consumer pays upfront → Funds locked in trust account → Service delivered and verified → Funds released to provider. No direct money transfers between users.

AI TrustTrade's escrow mechanism is the cornerstone of our consumer protection framework, differentiating us from traditional marketplaces and payment platforms. This document details the complete escrow lifecycle, trust account structure, dispute resolution process, and BSP compliance framework.

Escrow System Key Metrics

100% Transactions Through Mandatory Escrow	48hrs Auto-Release Window (if No Action)	<7 Days Average Dispute Resolution Time	85% Smooth Completion (No Disputes)
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1. Complete Escrow Lifecycle

1
PENDING

Booking & Payment

Consumer books a service and makes payment. Funds are immediately moved from consumer's wallet or payment source to the escrow sub-account within the trust account.

System Actions:

- Generate unique escrow ID (e.g., ESC-2025-123456)
- Record service details: category, description, agreed price, date/time, location
- Deduct funds from consumer wallet: P(amount) × P(platform fee)
- Move funds to escrow sub-account (HELD status)
- Send notifications to both consumer and provider
- Start escrow timer: 7 days (standard), 30 days (projects)

User View:

- Consumer:** "Your payment of P2,000 is secured in escrow. Juan has been notified."
- Provider:** "New booking! Payment of P2,000 is secured. Complete service to receive funds."

2
IN ESCROW

Funds Held in Trust Account

Funds are locked in the platform's BSP-compliant trust account. Neither consumer nor provider can access the funds. Protected from platform insolvency through separate legal entity structure.

Characteristics:

- Location:** BPI Trust Account → Escrow Sub-Pool
- Consumer Access:** ❌ Cannot cancel or withdraw
- Provider Access:** ❌ Cannot claim until completion verified
- Platform Access:** ❌ Segregated from operating funds, cannot be used for business
- Insolvency Protection:** ✅ Bankruptcy-remote structure
- Hold Duration:** Until service completion OR dispute resolution OR cancellation

Provider Actions During Service:

- Accept/decline booking (24hr window)
- Communicate with consumer via in-app chat
- Arrive at service location (GPS verified)
- Perform agreed service
- Upload completion proof: before/after photos, signed receipt
- Mark job as "Completed" in app

3
FINDING RELEASE

Service Completion & Verification

Provider marks service as completed and submits proof. Consumer receives notification to review and approve. AI system performs automated verification checks.

Provider Submission:

- Click "Mark as Completed" button
- Upload 2-5 photos (before/after, work proof)
- Add completion notes (optional)
- System captures GPS timestamp automatically

AI Verification (Automated):

- Photo Analysis:** Computer vision checks image quality, relevance
- GPS Verification:** Confirms provider was at service location
- Time Check:** Service completed within scheduled window
- Pattern Analysis:** Flags anomalies (e.g., same photo used multiple times)
- Risk Score:** Low risk → auto-approve, High risk → flag for manual review

Consumer Options (48-hour window):

- Option 1:** Approve immediately → Funds released instantly
- Option 2:** Request revision → Provider makes corrections, clock resets
- Option 3:** Raise dispute → Escrow frozen, mediation begins
- Option 4:** No action → Auto-approve after 48 hours (default)

4A
RELEASED

Successful Release (85% of transactions)

Consumer approves OR 48 hours pass without dispute. Funds are released from escrow to provider's wallet, minus platform fees.

Fund Calculation Example (P2,000 service):

- Gross Amount in Escrow: P2,000
- Platform Fee (8% provider + 2% consumer): -P200
- Insurance Premium (if opted): -P20 (1%)
- Net to Provider Wallet: P1,780**
- Provider can withdraw immediately or use for future transactions

Post-Release Actions:

- Update trust scores: Consumer +2 points, Provider +8 points
- Request ratings: Both parties rate each other (1-5 stars)
- Generate receipts: Tax-compliant digital receipts issued
- Archive transaction: Stored for 5 years per BSP requirements
- Trigger analytics: Data used for fraud detection, ML training

4B
IN DISPUTE

Dispute Resolution Process (10% of transactions)

Consumer files a dispute claiming service issues. Funds remain frozen in escrow while platform mediators investigate and make a determination within 7 days.

Dispute Filing:

- Consumer selects dispute reason: not completed, poor quality, damage, no-show, other
- Upload evidence: photos, videos, chat screenshots (max 10MB)
- Describe issue: 500-character explanation required
- System freezes escrow: Funds locked, neither party can access

Mediation Process (7-day resolution):

- Day 1:** Mediator assigned, provider notified, 24hr response window
- Day 2-3:** Provider submits defense + evidence
- Day 4-5:** Mediator reviews all evidence, may request additional info
- Day 6:** Determination made (full refund / full release / partial settlement)
- Day 7:** Decision executed, parties notified, 48hr appeal window opens

Possible Outcomes:

- Consumer Wins (40%):** Full refund to consumer, provider trust score -10 points
- Provider Wins (30%):** Full release to provider, consumer trust score affected if frivolous
- Partial Settlement (25%):** Split (e.g., 70% provider, 30% refund), both scores mildly affected

4C
CANCELLED

Pre-Service Cancellation (5% of transactions)

Either party cancels before service delivery. Cancellation fees may apply based on timing and reason.

Cancellation Fee Structure:

- Consumer cancels >24hrs before:** 100% refund (no penalty)
- Consumer cancels 12-24hrs before:** 80% refund (20% cancellation fee to provider)
- Consumer cancels <12hrs before:** 50% refund (50% cancellation fee to provider)
- Provider cancels >24hrs before:** 100% refund + P100 inconvenience fee
- Provider no-show:** 100% refund + trust score -20 points + potential suspension

Valid Cancellation Reasons (No Penalty):

- Emergency (medical, family, natural disaster) - requires proof
- Provider illness - requires medical certificate
- Force majeure (typhoon, earthquake, government order)
- Mutual agreement - both parties consent

5
CLOSED

Post-Transaction Finalization

Transaction is archived, ratings finalized, trust scores permanently updated, and data stored for regulatory compliance and platform improvement.

Final Actions:

- Transaction status set to CLOSED (immutable)
- Review period ends (no further changes allowed)
- Ratings locked in (visible on public profiles)
- Trust scores permanently updated (affects future matching)
- Data anonymized and used for ML model training
- Tax records generated (for provider income tracking)

Provider Options:

- Withdraw earnings to bank (free, 1-3 days) or GCash (2% fee, instant)
- Keep funds in wallet for future use (pay for platform services)
- View transaction history for tax/accounting purposes

Consumer Benefits:

- Transaction history preserved (download receipt anytime)
- Rebook same provider with loyalty discount (5% off next booking)
- Contribute to provider's reputation (ratings help other consumers)

2. Escrow State Transition Diagram



3. Trust Account Structure & Escrow Management

BPI Trust Account Composition (Example: P48M Total)

AI TrustTrade Trust Account (BPI - BSP Approved)

Escrow Sub-Pool

Active Escrows

Ongoing transactions (avg 2,000 escrows × P2,500 each)

Disputed Escrows (FROZEN)

Under mediation (avg 200 disputes × P2,500 each)

Reserve Buffer (10%)

Liquidity cushion for timing mismatches

Wallet Sub-Pool

User Wallet Balances

Consumer wallets: P15M (5,000 users × P3K avg)

Provider wallets: P23M (5,000 users × P4.6K avg)

Float Reserve (18%)

Instant withdrawal liquidity buffer

Insurance Reserve

Claims fund for micro-insurance payouts

TOTAL TRUST ACCOUNT BALANCE: P48,000,000

Daily Reconciliation Process (9:00 AM Daily)

Step 1: Calculate Expected Balance
Previous Day Balance + New Escrows Created + Wallet Top-ups - Escrows Released - Wallet Withdrawals = Expected Balance

Step 2: Query Actual Bank Balance
Automated API call to BPI Trust Account retrieves actual balance as of 8:59 AM

Step 3: Variance Analysis
Compare Expected vs. Actual | Acceptable variance: ±P1,000 (rounding, timing)
IF variance > P1,000 → Alert CFO, Finance Manager → Transaction audit → Resolve within 4 hours

Step 4: Generate Report
Daily reconciliation report submitted to management by 12:00 PM
Includes: Total escrows outstanding, total wallet balances, inflows/outflows by category, reserve adequacy

BSP Reporting Requirements

- Daily:** Internal reconciliation (finance team review)
- Weekly:** Management dashboard review (CFO + CEO)
- Monthly:** BSP submission (if required under MEFS framework)
- Quarterly:** External auditor verification (BSP-accredited firm)
- Annually:** Full financial audit with published summary

4. Multi-Layer Consumer Protection

Insolvency Protection

What happens if AI TrustTrade goes bankrupt?

User funds are completely protected. The trust account is a separate legal entity that cannot be touched by creditors. All escrows and wallet balances would be returned to users within 30 days through bank-administered wind-down process.

Additional Safeguards:

- P50M insurance policy specifically for trust account
- PDIC coverage (up to P500K per depositor if bank fails)
- Quarterly external audits verify segregation
- BSP oversight ensures compliance

Fair Dispute Resolution

Neutral third-party mediation within 7 days

Platform mediators are trained in consumer protection law and service quality standards. They review all evidence objectively and make determinations based on:

- Photo/video evidence quality and relevance
- GPS data confirming service location
- Chat logs showing communication
- Historical trust scores and patterns
- Industry standards for service quality

Appeals Process: Either party can appeal within 48 hours for senior mediator review (final decision within 3 additional days)

AI Verification System

Automated service completion checks

Before releasing escrow, AI system performs multiple verification layers:

- Computer Vision:** Analyzes uploaded photos for quality, relevance, authenticity
- GPS Verification:** Confirms provider was at service location during scheduled time
- Pattern Recognition:** Flags anomalies (e.g., duplicate photos, impossible timelines)
- Trust Score Correlation:** High-trust providers get faster auto-release
- Risk Scoring:** Suspicious patterns trigger manual review before release

Escrow Freezing Mechanisms

Immediate fund protection when issues arise

Escrows are automatically frozen (no one can access funds) when:

- Consumer files a dispute (funds held until resolution)
- Fraud detected by AI system (investigation required)
- Sanctions screening flag (AML/CFT compliance)
- Provider account suspended (pending investigation)
- Consumer reports safety issue (immediate intervention)

Unfreezing: Only after thorough review and determination by platform compliance team

5. Dispute Resolution Framework

7-Day Dispute Resolution Process

1
Filing
Consumer files dispute with reason + evidence

2
Notification
Provider gets 24hr to respond with defense

3
Review
Mediator examines all evidence (2-4 days)

4
Decision
Determination made, funds distributed accordingly

Outcome Type	Percentage	Fund Distribution	Trust Score Impact
Consumer Wins	40%	100% refund to consumer	Provider: -10 points Consumer: No change
Provider Wins	35%	100% release to provider	Provider: +5 points Consumer: -5 if frivolous
Partial Settlement	25%	70% provider / 30% refund (typical)	Both: -2 to -5 points (case dependent)

Example Dispute Scenario: Poor Quality Claim

Situation: Maria paid Juan P3,000 for house painting. Maria claims quality is poor (uneven paint, missed spots).

Evidence Submitted:

- Maria: Photos showing uneven areas, video walkthrough, chat showing she asked for corrections
- Juan: Before/after photos, claim work was "good enough," no revision requests initially

Mediator Analysis:

- Photos show clear quality issues (unprofessional finish)
- Chat logs confirm Maria requested touch-ups, Juan refused
- Industry standard: Painting should be even, no visible brush marks
- Juan's trust score: 650 (slightly below average)

Determination: Partial Settlement

- Juan receives 60% (P1,800) - compensated for time/effort
- Maria receives 40% refund (P1,200) - compensated for poor quality
- Juan's trust score: -8 points (quality issue confirmed)
- Maria's trust score: +2 points (legitimate complaint)
- Juan flagged for quality monitoring on next 3 jobs

6. Escrow Risk Management

Risk Scenario	Probability	Mitigation Strategy	User Protection
Platform Insolvency	Very Low	Separate trust account + P50M insurance + Regular audits	100% of funds returned via bank wind-down process
Trust Account Bank Failure	Very Low	Use only BSP-supervised universal banks (BPI, BDO, UnionBank)	PDIC insurance up to P500K + Platform insurance P50M
Reconciliation Error	Low	Daily automated reconciliation + Manual verification	Discrepancies resolved within 24hrs, no user impact
Fraudulent Dispute	Medium	Evidence requirement + Mediator training + Trust score impact	False claims penalize filer's trust score (-10 points)
System Failure During Release	Low	Idempotent transactions + Manual fallback process	Funds never lost, release retried until successful
Mass Dispute Attack	Very Low	Pattern detection + Rate limiting + Account suspension	Legitimate users unaffected, attackers banned

7. Escrow Comparison: AI TrustTrade vs. Alternatives

Feature	AI TrustTrade Escrow	Traditional Marketplace	Direct Payment (No Escrow)
Escrow Requirement	✅ Mandatory (100%)	⚠️ Optional (buyer protection)	❌ None
Consumer Protection	✅ Full (escrow + verification)	⚠️ Partial (if opted in)	❌ None (trust-based)
Provider Assurance	✅ Payment guaranteed	⚠️ Payment probable	❌ Payment uncertain
Dispute Resolution	✅ Embedded (7 days)	⚠️ Platform-dependent	❌ None (legal action only)
Trust Account	✅ BSP-compliant	⚠️ Varies (not always regulated)	❌ N/A
Insolvency Protection	✅ Bankruptcy-remote	❌ Risk of loss	❌ N/A
Auto-Release	✅ 48 hours (configurable)	⚠️ 14-30 days (typical)	❌ N/A
Verification	✅ AI + Manual	⚠️ Basic (tracking number)	❌ None
Fee Structure	10% total (8% provider, 2% consumer)	15-20% (typically)	0% (but high fraud risk)
Fraud Rate	<2% (target)	5-10% (industry avg)	30%+ (informal markets)

8. Technical Implementation Details

Escrow State Machine (Simplified)

```
class EscrowStateMachine: def __init__(self, escrow_id): self.escrow_id = escrow_id self.state = "PENDING" self.amount = 0 self.consumer_id = None self.provider_id = None def create_escrow(self, consumer_id, provider_id, amount): """Move funds from consumer wallet to escrow""" if self.state != "PENDING": raise InvalidStateTransition # Deduct from consumer wallet consumer_wallet.deduct(amount) # Move to trust account escrow_sub_pool.trust_account_escrow_pool.add(self.escrow_id, amount) # update state self.state = "IN_ESCROW" self.amount = amount self.consumer_id = consumer_id self.provider_id = provider_id # Log for reconciliation audit_log.record("ESCROW_CREATED", self.escrow_id, amount) def mark_completed(self): """Provider marks service as done""" if self.state != "IN_ESCROW": raise InvalidStateTransition self.state = "PENDING_RELEASE" self.completion_time = datetime.now() # Start 48-hour auto-release timer scheduler.schedule(self.auto_release, delay=48hours) def approve_release(self): """Consumer approves OR auto-release triggered""" if self.state != "PENDING_RELEASE": raise InvalidStateTransition # Calculate fees platform_fee = self.amount * 0.10 self.provider_net = self.amount - platform_fee # Move funds trust_account_escrow_pool.deduct(self.escrow_id, self.amount) trust_account_wallet_pool.add(self.provider_id, provider_net) operating_account.add(platform_fee) # update state self.state = "RELEASED" # update trust scores trust_score.update(self.consumer_id, +2) trust_score.update(self.provider_id, +8) # Log audit_log.record("ESCROW_RELEASED", self.escrow_id, provider_id) def raise_dispute(self, reason, evidence): """Consumer files dispute""" if self.state not in ["PENDING_RELEASE", "IN_ESCROW"]: raise InvalidStateTransition self.state = "IN_DISPUTE" # Cancel auto-release timer scheduler.cancel(self.auto_release) # Freeze funds (no one can access) trust_account_escrow_pool.freeze(self.escrow_id) # Assign mediator mediator = mediator_pool.assign() dispute = Dispute(self.escrow_id, reason, evidence, mediator) # Start 7-day resolution timer dispute.resolve_by = datetime.now() + timedelta(days=7)
```

Security & Idempotency

Atomic Transactions: All fund movements are atomic database transactions. Either the entire operation succeeds (wallet deducted AND escrow credited) or entire operation rolls back. No partial states possible.

Idempotency Keys: Every escrow operation has a unique idempotency key. If the same request is sent twice (e.g., network retry), system detects duplicate and returns original result without re-executing. Prevents double-charging or double-release.

Audit Trail: Every state change logged with:

- Timestamp (millisecond precision)
- User ID (who initiated action)
- Previous state → New state
- Amount involved
- Reason/evidence (if applicable)
- IP address and device fingerprint

Encryption: Escrow records encrypted at rest (AES-256) and in transit (TLS 1.3). Decryption keys stored in AWS KMS with role-based access.

9. BSP Compliance Framework

Escrow System Meets BSP Requirements

AI TrustTrade's escrow structure has been designed from the ground up to meet and exceed BSP's requirements for consumer fund protection, operational resilience, and financial transparency.

- Separate Trust Account:** ✅ User funds legally segregated from platform operating funds (BSP Circular requirement)
- Daily Reconciliation:** ✅ Automated daily balance verification with manual audit escalation (BSP best practice)
- Quarterly External Audit:** ✅ BSP-accredited auditor reviews trust account integrity
- Consumer Protection:** ✅ Mandatory escrow exceeds standards of optional buyer protection systems
- Dispute Resolution:** ✅ 7-day resolution meets proposed MEFS requirement (14-day maximum)
- AML/CFT Integration:** ✅ Sanctions screening on all escrow parties, STR filing for suspicious patterns
- Operational Resilience:** ✅ 99.9% uptime, disaster recovery plan, business continuity tested quarterly
- Transparency:** ✅ Users can view real-time escrow status, complete audit trail accessible

10. Conclusion: Escrow as Core Consumer Protection

Escrow System Summary

AI TrustTrade's escrow mechanism is not an optional feature but the foundational pillar of our marketplace-embedded financial service. By making escrow mandatory for 100% of transactions, we create a trust environment that protects both consumers and service providers, reduces fraud, and enables secure transactions even between strangers.

- Consumer Perspective:** Pay with confidence knowing funds are protected until service is verified
- Provider Perspective:** Work with assurance that payment is guaranteed upon completion
- Platform Perspective:** Reduce disputes, increase transaction completion, build marketplace trust
- Regulatory Perspective:** Enhanced consumer protection, lower systemic risk, complete audit trail

The escrow structure positions AI TrustTrade as the Philippines' safest platform for service transactions, deserving of BSP's support under the proposed MEFS regulatory framework.