REES INNOVATION HUB — DIFC · 28 APRIL 2026 · INFORMATION PACK

Broker Bridge + On-Chain Escrow

The sovereign infrastructure layer for Dubai real estate.

PropTech 3.0 — AI-native · On-device · Zero-knowledge · DLD-native

SUBMITTED TO	Dubai Land Department · RERA · VARA · DIFC Innovation Hub
SUBMITTED BY	Rami Alcheikh · Founder & CEO, Emerge Digital (Dubai)
EVENT	REES Innovation Hub — DIFC, 28 April 2026
CLASSIFICATION	Confidential — Regulator Pre-Read & Leave-Behind
CONTACT	rami@emergedigital.com · +971 58 586 6208

Executive Summary

Dubai's real estate sector is the most transparent in the region by any public measure, yet the broker supply chain — the layer that actually converts inventory into transactions — still runs on WhatsApp groups, unstructured MOUs, and two-to-four-week manual title transfers. The PropTech 2033 whitepaper quantified this gap precisely: 231 PropTechs mapped to the Dubai market and exactly zero tools addressing the broker supply-chain layer. That is the gap this brief proposes to close.

Broker Bridge + On-Chain Escrow is the first privacy-first PropTech 3.0 platform that is fully DLD-native, zero-knowledge by architecture, and sovereign by design. It is built in Rust with a full AGPL core, is already shipping against Dubai Pulse and DLD data, and is filed with VARA under the IDQ regime (October 2025, response pending).

The platform delivers a single signed data path across four stages: on-device AI matching (Broker Bridge), XRPL smart escrow with Xahau DocProof zero-knowledge proofs (On-Chain Escrow), DLD valuation oracle and title-deed attestation, and the authoritative Dubai Pulse market feed. Title transfers collapse from two-to-four weeks of manual processing to under one day with a full audit trail, while every contact, budget, and unit number remains cryptographically private on the broker's device.

> This is not another agent-productivity tool. This is the missing sovereign infrastructure layer for the AED 60-billion tokenized real estate market D33 has already sized and that Real Estate Strategy 2033 has already mandated.

We are requesting REES, DLD, and DIFC to open five doors: (1) DLD Valuation Oracle API access; (2) sandbox escrow license waiver; (3) a technical demonstration slot with DLD and VARA; (4) formal introduction to Ctrl Alt and Ripple; and (5) a strategic public-private partnership capital tranche of AED 5 million, with DLD or DIFC anchoring the cap table. The PPP structure is deliberate — this is critical national data infrastructure, and keeping sovereign IP inside Dubai aligns incentives and de-risks the sandbox for the regulator.

1. The Problem — A Sovereign Data Gap in the Broker Supply Chain

1.1 The PropTech 2033 Whitepaper Named the Gap

The DLD/DIFC-backed PropTech 2033 whitepaper is the most authoritative current map of Dubai's real estate technology landscape. It tracked 231 PropTechs operating in or serving the Dubai market and categorised them across seven verticals: listings, analytics, CRM, tokenization, valuation, transactions, and broker tools. The whitepaper's central finding was unambiguous: across all 231 platforms, zero were solving the broker supply-chain layer — the private broker-to-broker dealflow that produces roughly 70% of Dubai's off-plan and secondary transactions before those deals ever touch a public portal.

1.2 What the Gap Looks Like in Practice

Every working day, brokers exchange unit numbers, client names, budgets, and passport-level identifiers across WhatsApp groups and Instagram DMs with no structured data model, no consent record, and no PDPL-compliant storage boundary. To compensate for the absence of a structured supply-chain layer, brokers mine the DLD public registry for comparable transactions — a workaround that strains the system and exposes client data to multiple intermediaries with no cryptographic isolation.

Downstream, title transfer itself remains a two-to-four-week manual process. Memoranda of Understanding are drafted in email, No Objection Certificates are walked between counters, and bank escrow is settled offline. Each handoff creates a data leak, a compliance ambiguity, and a buyer-experience discount — in a market where up to 70% of buyers are international and comparing Dubai to faster, tokenized jurisdictions.

1.3 Why This Reads as a Sovereignty Question, Not a Productivity One

A privacy leak in broker WhatsApp groups is not only an operational issue. It is a systemic vulnerability to the transparency, trust, and data sovereignty of Dubai's real estate sector — the very attributes that differentiate Dubai from peer markets and that Real Estate Strategy 2033 is built to protect. The agent-productivity category — CRM suites, listing managers, lead-capture tools — addresses the INBOUND leak from social DMs, which is a real and valuable problem. The broker supply-chain gap is the OUTBOUND leak: broker-to-broker transmission of personally identifiable information with no cryptographic boundary. Both matter; they are solved by different architectures.

> The PropTech 2033 whitepaper tracked 231 tools. None addressed the broker supply-chain gap. Broker Bridge + On-Chain Escrow is the one.

2. The Solution — One Signed, DLD-Native Data Path

The platform unifies four stages into a single signed data path. Each stage is independently compliant; together they eliminate the supply-chain gap end-to-end. No component duplicates Oqood, MyDLD, or any existing DLD portal — the architecture is additive and federates cleanly into the existing DLD ecosystem.

2.1 Stage 01 — Broker Bridge (Intelligence Layer)

- Rust cross-platform runtime — native on macOS, Windows, iOS, and Android. No browser dependency, no cloud footprint for broker-to-broker data.
- On-device large language model — the broker selects from Ollama, Google Gemma, or other approved local models. The model never touches KYC or regulated personal data; it structures free-text requirement notes into a typed board schema entirely on the broker's own device.
- HMAC-SHA256 hashed contacts with per-platform secrets — contacts are cryptographically one-way at the database boundary. Zero plaintext PII is persisted.
- Nomic Embed vector matching at a ≥ 85% cosine threshold — brokers match supply to demand without exposing underlying identifiers.
- Output of this stage: a signed match + MOU object that feeds downstream into the execution layer.

2.2 Stage 02 — On-Chain Escrow (Execution Layer)

- XRPL smart escrow implemented via Xahau Hooks — Rust compiled to WebAssembly with deterministic execution and 3.5-second finality.
- Xahau DocProof provides zero-knowledge proof attestation for the title deed and MOU signing flow — the panel verifies validity without ever seeing the underlying document.
- UAE Pass is the primary identity rail for resident buyers; international buyers use a passport-based zero-knowledge fallback.
- End-to-end transfer time collapses from two-to-four weeks to under one day with a complete on-chain audit trail.

2.3 Stage 03 — DLD Oracle (Data Layer)

- Live valuation oracle — drives escrow and collateralisation logic. The API access request is the first of the five doors in the REES ask.
- Title-deed attestation is written on-chain through the Hook layer; DLD remains the authoritative source of truth. The on-chain record is a verifiable mirror, not a parallel ledger.
- Oqood-ready — the platform augments the existing off-plan registry workflow; Oqood sees cleaner, verifiable inputs without requiring any portal change.

- Compliant with Dubai Law 7/2006 (Real Property Registration) by construction.

2.4 Stage 04 — Dubai Pulse (Macro Feed)

- Live 15-minute DLD transaction feed integrated directly into the broker's comparable-sales intelligence.
- Four active pillars with 85–95% coverage: registered transactions, rental contracts, developer project registry, and spatial / plot metadata.
- Full offline SQLite cache — the broker can price confidently even without connectivity. All queries are local; no telemetry is sent back to Emerge.

> Broker Bridge → XRPL Hook / ZKP → DLD Oracle → Dubai Pulse. Four stages. One signed data path. DLD-native. ZKP-anchored.

3. Regulatory Alignment

Every architectural decision has been reconciled against the live UAE legal stack before any code was written. The table below lists the instruments the platform is compliant with by design and summarises the mechanism of compliance.

INSTRUMENT	MECHANISM OF COMPLIANCE
UAE PDPL (Federal Decree-Law 45/2021)	Zero plaintext PII at the database boundary. HMAC-SHA256 one-way hashing with per-platform secrets. On-device intelligence layer — no broker-to-broker PII ever transits Emerge infrastructure.
GDPR (extraterritorial exposure)	Data-minimisation by architecture. Right to erasure is cryptographic — removing the per-platform secret renders all HMAC hashes unlinkable. Stateless Vercel Edge relay logs nothing.
RERA Valuation Standards 2025	DLD Valuation Oracle is the authoritative source. No client-side valuation logic; the broker sees only the Oracle-signed value.
Dubai Law 7/2006 (Real Property Registration)	DLD retains sole authority over title registration. The on-chain layer mirrors — it does not originate — title events. Oqood workflows are preserved unchanged.
Federal Law 8/2007 (Escrow)	Smart escrow complies with the escrow account segregation requirement; sandbox waiver requested to permit Hook-based execution during the REES pilot.
CBUAE AML Guidelines	UAE Pass primary KYC; Xahau DocProof ZKP secondary attestation. All counterparty identifiers are auditable by the regulator while opaque to third parties.
VARA Rulebook 2024 — IDQ filed Oct 2025 (pending)	Platform is filed under the Investment Dealer Qualified regime for real-world-asset tokenization. Response timeline: Q2 2026.
D33 Agenda + Real Estate Strategy 2033	AED 60-billion tokenized real estate target is explicit. Broker Bridge + On-Chain Escrow is the end-to-end rail that makes that target operational at broker level.

A detailed regulatory-mapping memorandum is available on request and has been pre-shared with VARA counsel as part of the IDQ filing.

4. Market Opportunity & Commercial Model

4.1 The AED 60-Billion Window

D33 has explicitly sized the tokenized real estate opportunity at AED 60 billion by 2033. DLD already processes 20,000-plus registered transactions per month today at the underlying asset layer. The gap is not demand — it is the rail that converts demand into compliant, sovereign, on-chain execution. The commercial thesis of this brief is that the rail is worth building, and that Broker Bridge + On-Chain Escrow is the rail.

4.2 Three-Year Base Case

METRIC	Y1 (2026)	Y2 (2027)	Y3 (2028)
GMV (AED M)	90	300	525
Revenue (AED M)	1.4	4.6	8.05
EBITDA Margin	negative	34%	68%
Intl. Buyer Share	55%	65%	70%
Market Capture vs. D33	< 0.01%	0.005%	< 0.01%

The three-year base case captures less than 0.01% of the D33-sized opportunity. The scenario is deliberately conservative: it excludes any material contribution from Ripple/Ctrl Alt tokenization partners and assumes no cross-emirate expansion in the pilot window.

4.3 Revenue Model

- Broker-to-broker match fee on each closed MOU.
- On-chain escrow + title-transfer fee, scaling with transaction value.
- Tokenized-asset distribution fees (Y2 onward, subject to VARA IDQ approval).
- Broker subscription (Pro tier) — a volume funnel, not the revenue concentration. Real economics sit in the on-chain execution layer.

4.4 Sensitivity

The VARA-filed sensitivity analysis shows a −20% revenue downside scenario still reaches cash-positive operation by Q4 of Year 2. The primary sensitivity is not adoption; it is the timing of the oracle API grant and the sandbox license waiver — i.e., the first two doors of the REES ask.

5. Traction & Pilot Readiness

5.1 Platform Status

- Broker Bridge core is built in Rust with a full AGPL license on the core runtime. The desktop and mobile builds are shipping.
- Data architecture is live against Dubai Pulse and DLD public endpoints. SQLite offline cache is functional across all four Pulse pillars.
- XRPL smart-escrow testing UI is functional today on xrpl-wasm-stdlib. Xahau DocProof ZKP integration is in late-stage testing.
- Zero-knowledge relay on Vercel Edge is deployed. Stateless; logs nothing.

5.2 Regulatory Filings

- VARA IDQ application filed October 2025 — response pending, timeline Q2 2026.
- REES Innovation Hub application filed for the 28 April 2026 cohort.
- DLD Valuation Oracle API access — RFP drafted, awaiting this week's decision.

5.3 Partnerships & Community

- Emerge Digital — founding entity, mainland-licensed, majority IP holder.
- Arlo (DET) — brand, design, and buyer-experience partner.
- Napkin Global (ADGM) — international buyer-flow partner.
- Conversations open with Ctrl Alt and Ripple for post-pilot tokenization cohort.

5.4 Pilot Scope (Q3 2026, subject to door-1 and door-2 approvals)

- Ten properties across mid-range off-plan inventory.
- Target 300 registered brokers/clients in Year 1; one thousand in Year 2.
- End-to-end execution: Broker Bridge match → Xahau DocProof ZKP → DLD oracle → on-chain transfer.
- Quarterly regulator review cadence — DLD, RERA, and VARA all invited to the pilot steering committee.

6. Team, IP & Governance

6.1 Founding Team

Rami Alcheikh — Founder & CEO, Emerge Digital. Five years operating in off-plan Dubai real estate with an active RERA license. Deep technical experience across XRPL, Xahau, zero-knowledge proof systems, and DLD data architecture. Full IP ownership of the Broker Bridge runtime, the Rust code base, and the ZKP title architecture — authored inside Dubai. Both the platform's author and an actively licensed broker — every design decision has been pressure-tested against real market flow.

6.2 Intellectual Property & Ownership

- Broker Bridge Rust runtime — AGPL on the core, proprietary on the mobile binaries and enterprise integrations. Full sovereign ownership inside Dubai.
- Xahau DocProof ZKP integration — proprietary. Pilot-exclusive during the REES window.
- Dubai Pulse connector — proprietary. Released as open-source once DLD grants oracle API parity.

6.3 Proposed Governance Post-PPP

Emerge retains majority control and 100% of the IP stack. The PPP tranche is structured as anchor equity, matched by a private round. DLD or DIFC receives an advisory board seat — not operational control — ensuring the regulator remains informed without being asked to own commercial execution. All design decisions remain with the founding team; all material regulatory decisions are ratified through the quarterly pilot steering committee.

7. The REES Ask — Five Doors

The asks are ordered regulator-first. Doors one through four are binary, low-cost decisions that unlock the capital structure in door five. The sequencing matters: the capital ask lands inside a chain of completed regulatory approvals, not at the opening of the negotiation.

Door 1 — DLD Valuation Oracle API Access

Grant a limited, pilot-scoped credential to the DLD valuation oracle. This is the single highest-impact unlock: it collapses the valuation risk surface of the entire on-chain escrow layer. Requested scope: ten properties, one year, read-only.

Door 2 — Sandbox Escrow License Waiver

Grant a Federal Law 8/2007 sandbox waiver for the duration of the pilot, permitting Hook-based execution within clearly scoped transfer ceilings. Requested scope: AED 5 million aggregate transfer volume, or the pilot's ten-property cap, whichever comes first.

Door 3 — Technical Demonstration Slot with DLD and VARA

A 15-minute live technical walkthrough at DLD HQ — the same demo is rehearsal-ready today. Purpose: let DLD engineering and VARA rulebook counsel examine the Rust code path, the Hook execution, and the ZKP attestation flow in real time.

Door 4 — Formal Introduction to Ctrl Alt and Ripple

An introduction through the DLD / DIFC channel to Ctrl Alt and Ripple's Dubai leadership. Both are VARA-aligned and actively building RWA tokenization cohorts; formal introduction accelerates the tokenization partnership path by approximately six months.

Door 5 — Strategic PPP Capital of AED 5 Million

Anchor capital tranche of AED 5 million, with DLD or DIFC in the cap table, matched by a private round. Use of funds: Rust engineering team (40%), ZKP audits and security (20%), pilot operations (20%), regulatory and legal (20%). 24-month runway to the three-year EBITDA-positive profile.

> Regulator-first sequencing. Capital last. The PPP structure is deliberate — this is critical national data infrastructure, not a productivity feature.

Appendix A — Technical Architecture Summary

A.1 Threat Model

Two adversarial trust domains are enforced by architecture. Domain 1 is the broker's own device, running the on-device LLM and HMAC layer — the broker never transmits plaintext PII off-device. Domain 2 is the on-chain execution layer, running Xahau Hooks with deterministic WASM — the panel, the regulator, and the counterparty all verify validity without decrypting the underlying data. The two domains never share state directly; the only handoff is a signed, minimized match object.

A.2 Key Performance & Compliance Numbers

- XRPL finality: 3.5 seconds (deterministic, not probabilistic).
- End-to-end title transfer: less than one working day (target: 4 hours median).
- Nomic Embed cosine threshold: ≥ 0.85 for match eligibility.
- HMAC: SHA-256 with per-platform rotating secret.
- Dubai Pulse coverage: 85–95% across the four active pillars, offline-first.
- Uptime target for pilot operations: 99.5% (measured on a per-stage basis).

A.3 Failure Modes & Mitigations

- DLD oracle downtime: Hooks fall back to the last cryptographically-valid cached valuation. Escrow is locked, never auto-released. A manual DLD override path is built in by design.
- WASM execution anomaly: deterministic by construction; any divergence triggers an automatic freeze and a regulator notification.
- Broker device compromise: on-device data is encrypted at rest; the HMAC secret is never stored on-device — it is ephemeral for the session.
- International buyer without UAE Pass: passport-based ZKP fallback is live; no code path silently degrades the KYC standard.

Appendix B — Regulatory FAQ

B.1 Does this replace Oqood or MyDLD?

No. DLD portals remain the authoritative systems of record. The platform is additive — it writes a verifiable on-chain mirror and delivers cleaner, signed inputs to the existing portals. Zero portal changes are required.

B.2 How is this different from agent-productivity tools already pitching REES?

Agent-productivity platforms address the INBOUND leak from Instagram and WhatsApp into the broker's inbox — a valid and valuable problem. Broker Bridge + On-Chain Escrow addresses the OUTBOUND leak: broker-to-broker transmission of PII, budgets, and unit numbers — the exact supply-chain gap the PropTech 2033 whitepaper identified. Horizontal productivity vs. vertical sovereign infrastructure. Complementary, not substitutable.

B.3 Is on-device Ollama / Gemma secure enough for regulated flows?

The on-device model never handles KYC or any regulated personal data. It structures free-text broker notes inside the Rust runtime on the broker's own device. KYC runs through UAE Pass plus Xahau DocProof ZKP — two separate, government-grade trust domains by design.

B.4 What happens if the DLD oracle goes down mid-transaction?

Escrow locks; it does not auto-release. The last cryptographically-valid cached valuation is honored for display only. A manual DLD override path is built in. XRPL finality is deterministic, so there is no race condition between Hook execution and oracle recovery.

B.5 Why XRPL / Xahau and not Ethereum?

Three reasons. One, transaction cost is sub-cent versus Ethereum L1 gas volatility. Two, finality is 3.5 seconds, deterministic. Three, Ripple and Ctrl Alt already hold VARA-aligned partnerships for RWA tokenization in Dubai. Xahau Hooks give native WASM escrow without writing a custom L1.

B.6 Why Xahau today instead of waiting for XRPL mainnet?

Xahau is the XRPL ecosystem's production smart-contract sidechain — Hooks, Rust/WASM escrow, and ZKP document signing are live there today. On XRPL mainnet, the Hooks amendment is still listed "In Development: TBD" with no activation timeline, and the Boundless ZK integration announced 14 April 2026 is testnet-only and targets confidential payment values, not document attestations. Choosing Xahau lets REES see a working pilot this quarter, not a 2027 roadmap. The escrow layer is architecturally portable — xrpl-wasm-stdlib, r-address account model, deterministic Hook execution — so migration to mainnet Hooks is a recompile-and-redeploy, not a rewrite. Full rationale and sources are in Appendix C.

B.7 What is the PPP rationale versus a purely private raise?

Broker Bridge + On-Chain Escrow is critical national data infrastructure for Real Estate Strategy 2033 and the D33 tokenization mandate. Anchoring DLD or DIFC in the cap table keeps sovereign IP inside Dubai, aligns regulator and operator incentives, and de-risks the sandbox. A purely private raise would leave the

national-security framing unrealised — we believe PPP is the right structure for infrastructure, not features.

B.8 What is the founder's equity position after the PPP?

Emerge Digital retains majority control and 100% of the IP stack. The PPP tranche is structured as anchor equity, matched by a private round. DLD / DIFC governance takes the form of an advisory board seat, not operational control.

Appendix C — Why Xahau today, not XRPL mainnet

C.1 The question

Given the cadence of active XRPL amendments in 2026 — XLS-65/66 lending, Boundless zero-knowledge integration, the quantum-resistance roadmap — a fair regulator question is whether reliance on the Xahau sidechain introduces redundancy or migration risk. The short answer is no for 2026, yes eventually, and — most importantly — by design. The architecture already anticipates the migration.

C.2 What requires Xahau today

- Hooks (smart escrow). The XRPL Foundation's official Known Amendments page, as updated February 2026, lists Hooks under "In Development: TBD." Xahau is the only XRPL-ecosystem chain on which Hooks are activated on mainnet. Our Rust/WASM escrow runtime runs on xrpl-wasm-stdlib, which is the shared tool-chain that any future mainnet Hooks deployment will also use.
- DocProof ZKP (document signing). Built on Xahau's Origo zero-knowledge layer plus Hooks. Seals a signed MOU, title deed, or NOC such that validity is cryptographically provable without exposing content. This is categorically distinct from confidential-payment ZKP, which is what XRPL mainnet is moving towards.
- 3.5-second finality for programmable escrow. Xahau mainnet is production-live with sufficient validator decentralisation for REES-grade pilots. Recent production deployments on Xahau mainnet (April 2026) confirm live operation at the layer we depend on.

C.3 What XRPL mainnet is doing in 2026 — and why it does not yet replace Xahau

- Boundless ZK integration (announced 14 April 2026, XRPL Zone Paris). Status: testnet-only; no mainnet activation timeline. Scope: confidential values on transactions — amount, sender, receiver — for institutional payments and DeFi. It does not cover programmable escrow or document attestations. DocProof's workflow is not superseded.
- XLS-65 (Single Asset Vaults) and XLS-66 (Lending Protocol). Status: in validator voting since January 2026; consensus reported at approximately 20%, against an 80%-for-two-consecutive-weeks activation bar. Scope: on-chain credit markets — orthogonal to escrow and signing.
- Quantum-resistance roadmap (announced April 2026). Status: forward-looking; does not affect current deployments and is neutral to the Xahau-vs-mainnet choice.
- Hooks amendment itself. Status on mainnet: still "In Development: TBD." Ripple's own CTO has publicly emphasised caution on mainnet Hooks activation. Xahau was created specifically to give the ecosystem programmable escrow without waiting for that decision.

C.4 Migration path (no lock-in)

- Shared tool-chain. The escrow runtime is built on xrpl-wasm-stdlib, the same standard that any future mainnet Hooks deployment will consume. Rust source compiles to the same WebAssembly target.
- Account model. r-addresses are structurally identical between Xahau and XRPL mainnet. User identity, multisig policies, and regulator view-keys carry over unchanged.
- Audit trail. Every Hook execution on Xahau is cryptographically anchored; the XRPL mainnet ↔ Xahau bridge (production today) is used for settlement and audit-anchor writes, so DLD and RERA already see a mainnet-visible record.
- Switch-over. When the mainnet Hooks amendment activates, the escrow layer migrates with a recompile-and-redeploy step; no rewrite of business logic, no change to the DocProof ZKP schema, no change to the DLD Oracle interface.

C.5 Risk summary

RISK	MITIGATION	EVIDENCE
Xahau becomes obsolete before the pilot completes	Shared xrpl-wasm-stdlib tool-chain; recompile-and-redeploy migration path already specified.	XRPL Foundation bridge specification; Xahau 2026 audit programme (public roadmap).
Mainnet Hooks activates and the sidechain becomes redundant	Planned event, not a surprise. Escrow layer migrates; DocProof continues on whichever layer carries ZK document primitives.	XRPL Known Amendments page (Feb 2026); Ripple CTO public statements on mainnet caution.
Regulator prefers a mainnet-only stack for legal clarity	Xahau is officially the XRPL-ecosystem smart-contract sidechain. Every Xahau escrow is anchored on XRPL mainnet via the bridge, giving a mainnet-auditable record today.	XRPL.org documentation; Ripple partnerships published in Dubai (Ctrl Alt, VARA alignment).
Boundless ZK supplants DocProof	Different primitive. Boundless targets confidential transaction values; DocProof targets document attestations. Complementary — we can adopt Boundless alongside DocProof when mainnet activation lands.	CoinDesk, Cointelegraph, The Defiant coverage (14 April 2026); Boundless architecture docs.

C.6 Sources

- XRPL Foundation — Known Amendments (xrpl.org/resources/known-amendments), status as of 27 February 2026.
- CoinDesk — “XRP Ledger adds zero-knowledge proofs targeting institutional privacy gap,” 14 April 2026.

- Cointelegraph — “XRPL taps Boundless for bank-grade privacy on public chains,” April 2026.
- The Defiant — “XRP Ledger gets native ZK proof verification via Boundless integration,” April 2026.
- Xahau Network — Roadmap 2026 (xahau.network/roadmap), JavaScript Hooks audit and wallet integration.
- Coingape — “XRPL validators vote on new lending protocol update,” January–February 2026 (XLS-65/66 consensus reporting).
- CryptoRank — “XRPL and Hooks debate: David Schwartz explains Ripple’s stance,” 2026.

Appendix D — Production UI Walkthrough

This appendix captures the four screens a regulator will spend most time in once the pilot cohort is live: marketplace and matching, the shared deal room, the DLD/RERA title-transfer handoff, and the Virtual IBAN funding path (with on-chain XRPL and hybrid modes available in the same tab strip). Each screenshot is rendered from the production build currently in internal UX testing.

> Note on visual treatment. The palette below is a pre-pilot engineering build for internal testing and is deliberately off-brand from the REES pitch materials. What matters here is not the colour scheme; it is the information architecture, the compliance checkpoints, and the audit surfaces visible in every view. Production styling will align with the Midnight Executive design system before REES onboarding.

D.1 Marketplace — tokenized inventory with on-device match intelligence

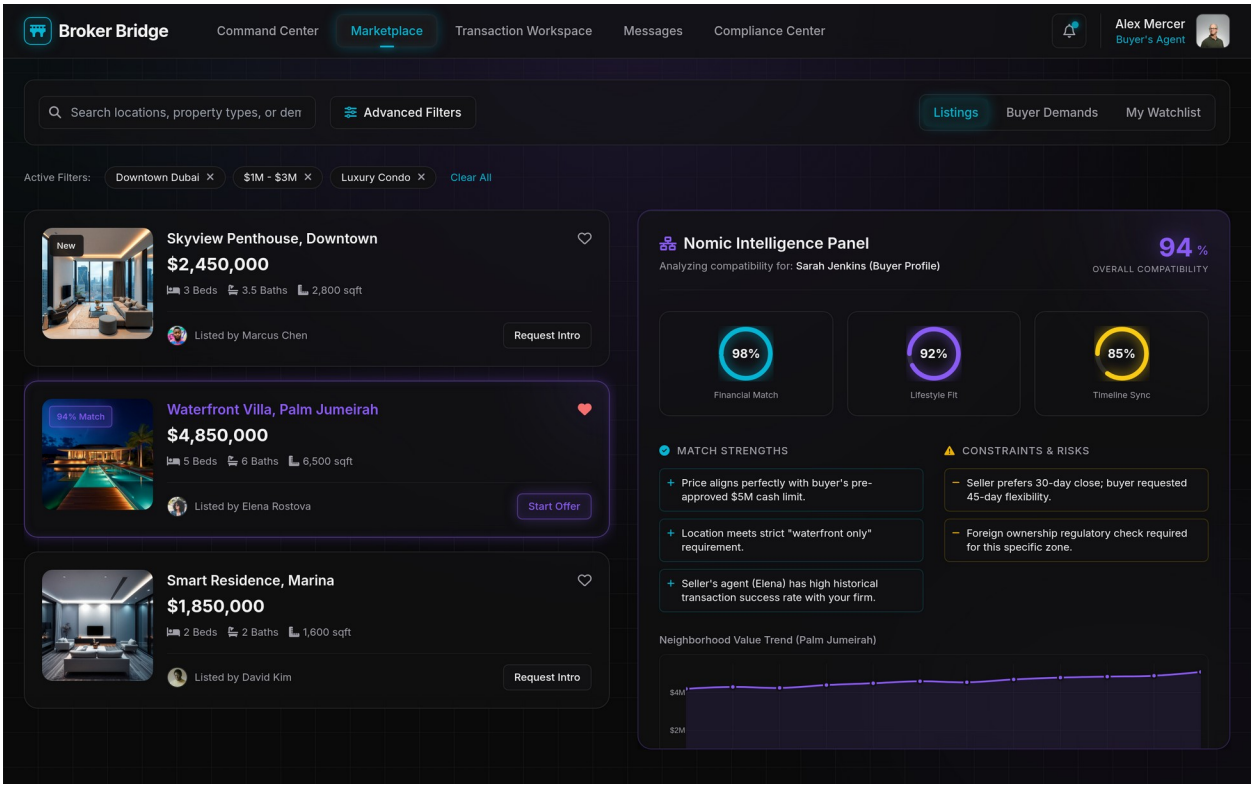

Figure E.1 — Broker-facing marketplace view. Each listing is pre-scored for buyer fit by the on-device Nomic model; no buyer PII leaves the broker's device.

The marketplace is the broker's first surface and the regulator's first test of the PDPL story. Every compatibility score shown in the right-hand Nomic Intelligence Panel is computed by an on-device cosine-similarity model against the broker's own encrypted buyer profile — a deliberate design choice so no personally-identifiable information ever transits a Broker Bridge server.

Compliance spotlight

- PDPL: No buyer PII leaves the broker's device. The 94% compatibility figure is the output of local inference — nothing about Sarah Jenkins' profile exists server-side in plain text.
- DLD alignment: Listings carry their own tokenized fraction state and link directly to the DLD Valuation Oracle; the price shown reconciles against sovereign data, not scraped third-party feeds.
- Dubai Pulse: The Market Demand Forecast panel surfaces the Dubai Pulse sovereign signal, giving the broker a pricing cue that is already regulator-vetted.

D.2 Deal room — one shared transaction workspace

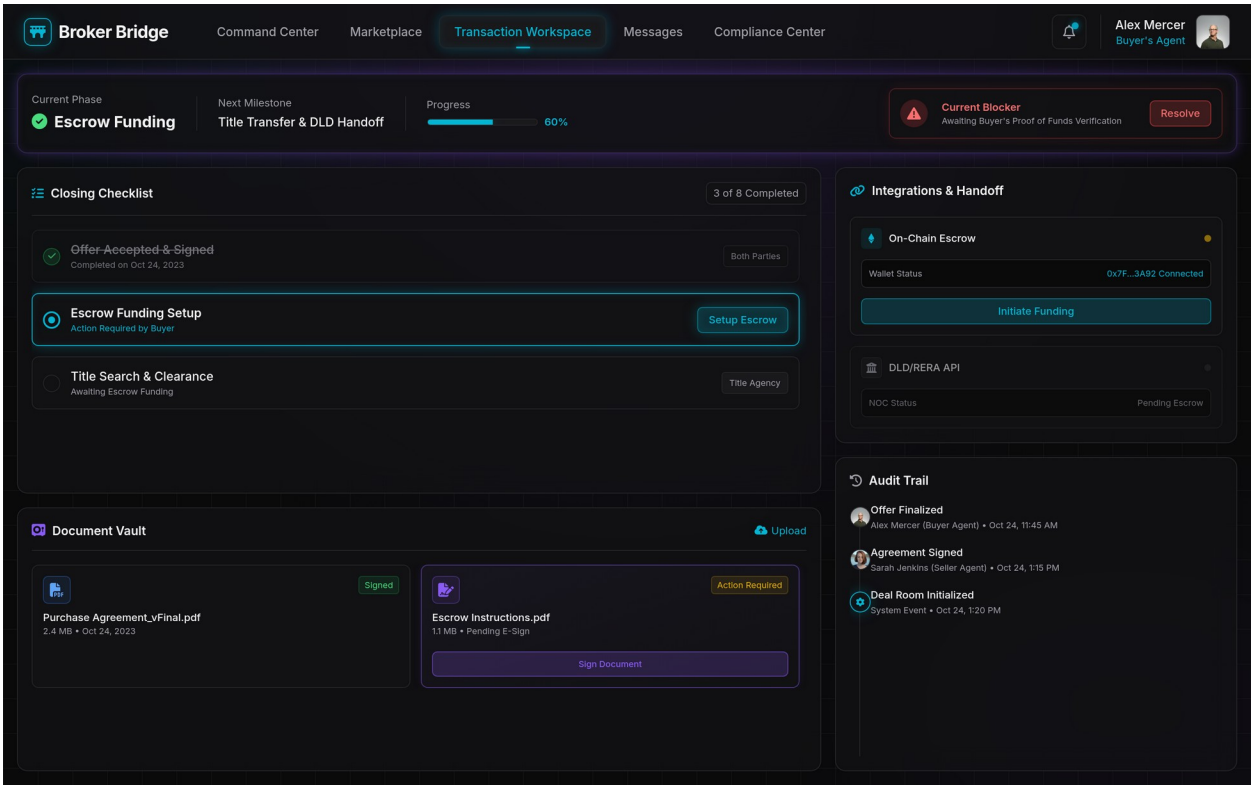

Figure E.2 — Transaction workspace. Both agents, the buyer, and (optionally) the regulator see the same live deal state. Every action is time-stamped; every pending blocker is visible to the room.

The deal room is the transaction's shared source of truth. The phase tracker at the top (Escrow Funding → Title Transfer & DLD Handoff → 60%) reconciles against the on-chain escrow state; the closing checklist enumerates every regulatory and contractual step, with explicit ownership; the integrations panel exposes wallet state, DLD/RERA API status, and NOC progress as first-class objects — not as attachments in an email thread. Every event is captured, immutably, in the Audit Trail panel on the right.

Compliance spotlight

- Audit-grade: Every state change — offer signed, agreement signed, escrow initiated — is written to an append-only trail. The regulator never has to ask 'when did X happen?' — the answer is on the screen.
- Blocker surface: The red 'Current Blocker — Awaiting Buyer's Proof of Funds' strip is the regulator-visible failure mode. Nothing about the blocker is hidden from any party to the transaction.
- On-chain escrow status: Wallet connection and escrow state are exposed as structured fields (0x1F…3A92), not as PDFs. A regulator querying the system can confirm execution without trusting a party.

D.3 Title transfer — orchestrated DLD / RERA handoff

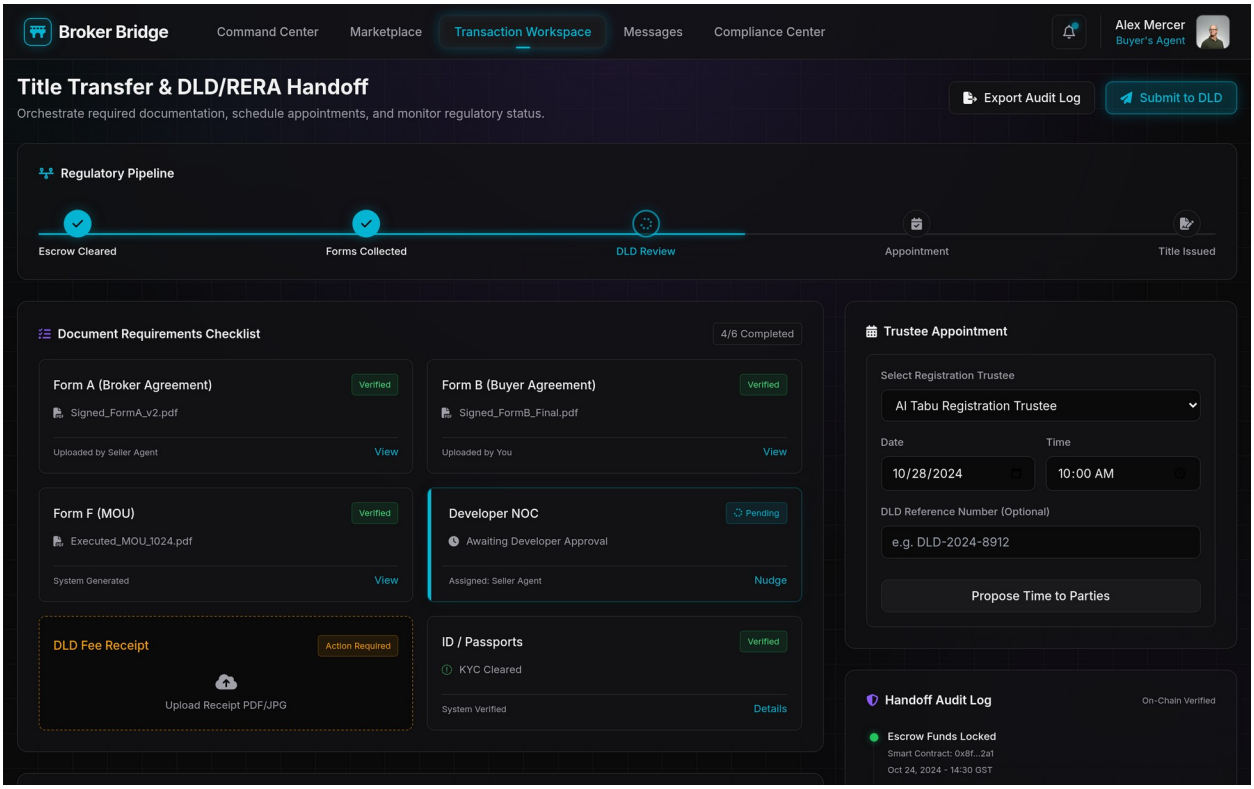

Figure E.3 — The highest-stakes screen for a DLD reviewer. Every form, NOC, appointment, and signature is exposed; the pipeline is designed to submit into the Dubai REST / Oqood flow cleanly, not around it.

The title-transfer view is where Broker Bridge hands control back to the regulator. The five-stage Regulatory Pipeline visualizes exactly where the deal sits inside DLD's timeline; the Document Requirements Checklist ties each form to its verifier role (seller's agent, buyer, trustee, system) and its verification status; trustee appointment with Al Tabu Registration Trustee is scheduled inline, not in a side thread; the 'Submit to DLD' action on the top-right dispatches the prepared, audited package in a single transaction, with the full handoff audit log travelling with it.

Compliance spotlight

- RERA trustee integration: Trustee scheduling is a first-class feature, not an off-platform process. The screen treats the RERA-licensed trustee as the named counterparty they are.
- Dubai REST / Oqood alignment: The pipeline's five stages (Escrow Cleared → Forms Collected → DLD Review → Appointment → Title Issued) mirror the public DLD process rather than abstracting over it.
- DLD Fee Receipt as a typed document: The system treats the fee receipt as a required, regulator-verifiable artifact — not an attachment.

D.4 Virtual IBAN funding — bank rails, auto-reconciled

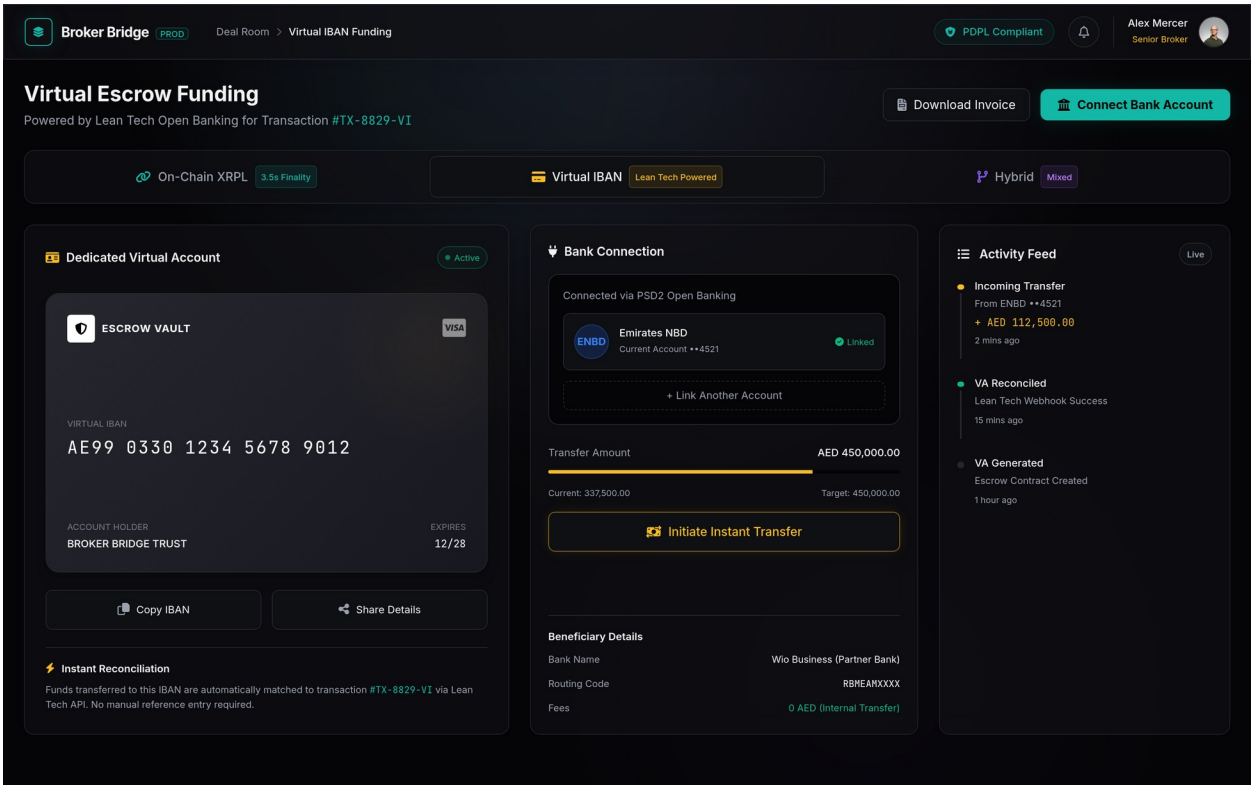

Figure D.4 — Dedicated Virtual IBAN per transaction, issued on Wio Business (partner bank), with Emirates NBD connected via PSD2 Open Banking. The Lean Tech activity feed auto-matches the incoming transfer to the deal; the on-chain XRPL and hybrid rails remain one click away in the same tab strip.

The Virtual IBAN funding view is the most regulator-legible surface in the stack: a dedicated, ring-fenced IBAN is issued against a single transaction on a licensed UAE partner bank, and the buyer funds it over their existing banking relationship. Lean Tech Open Banking handles the PSD2-grade connection to the buyer's bank (shown here as Emirates NBD) — there is no card-on-file, no screen-scraping, no shared credentials. Incoming transfers are auto-reconciled via Lean Tech webhook: the activity feed shows the live state transition from 'Incoming Transfer' → 'VA Reconciled' → 'VA Generated' in seconds, with every step written to the transaction's audit trail. Where a buyer prefers the on-chain rail, the XRPL tab (Xahau DocProof-backed smart escrow) and the hybrid tab sit in the same tab strip — same audit surface, same downstream DLD submission package.

Compliance spotlight

- Ring-fenced by design: Each transaction gets its own Virtual IBAN on Wio Business (partner bank). Commingling is structurally impossible — funds are bound to one deal, not a pooled trust account.
- PSD2-grade connectivity: Lean Tech Open Banking is the regulated conduit to the buyer's bank. Credentials never touch Broker Bridge, and every data call carries a PSD2 scope and consent timestamp that the regulator can replay.

- Auto-reconciliation as an audit artifact: The Lean Tech webhook writes VA state changes directly into the deal's audit trail — regulators and counsel can trace fund settlement without requesting bank statements after the fact.

> These four screens are available as a live walkthrough at brokerbridge.emergedigital.ae/technology#preview, alongside the regulator Q&A and the full briefing pack.

Contact & Next Steps

PRIMARY CONTACT	Rami Alcheikh · Founder & CEO, Emerge Digital
EMAIL	rami@emergedigital.com
MOBILE	+971 58 586 6208
15-MIN PRODUCT BRIEFING	Available on request. The live technical deep-dive — Rust code path, Hook execution, ZKP attestation — is reserved for the post-selection review, once the five REES asks are committed.
DEEP-DIVE APPENDICES	Regulatory mapping memorandum, VARA IDQ filing summary, and three-year financial model — all available under NDA.

— End of Information Pack —