

ValiDeck Phase-I Prototype and 24-Month Roadmap

EXECUTIVE SUMMARY

ValiDeck is building a privacy-first transaction data infrastructure that enables merchants, customers, and regulators to extract value from line-item purchase data without storing personal identifiers. Under the Privacy-Compliant eXtensible (PCX) framework, this architecture operates through three structural layers: **Custodian**, **Platform**, and **Governance**, ensuring that all transactional data is processed inside attested environments (TEEs/HSMs) following the *attest* → *pseudonymize* → *compute* sequence. Each operation produces cryptographic integrity proofs that form a continuous audit trail accessible to lawful oversight bodies. Phase-I is designed as a jurisdiction-aligned feasibility prototype and may be executed in Canada or Germany, depending on funding source and institutional alignment.

The Phase-I feasibility prototype will be executed within a 24-month, USD 1M budget envelope aligned to the selected funding jurisdiction and will prove that pseudonymized, tokenized transaction flows can be captured and analyzed across merchants while remaining compliant with applicable data-protection regimes, including PIPEDA and GDPR. Integration engineering begins at month 12 and runs alongside the closing stretch of the prototype build. In the final six months (months 18–24), the program converts the prototype into a pre-MVP conviction layer through architectural hardening, privacy auditing, early partner engagement, and pre-integration work with PoS vendors. This positions ValiDeck to raise the next funding round against a demonstrated privacy-compliant architecture rather than a conceptual pitch.

The 24-month plan establishes both feasibility and momentum. ValiDeck proves the model technically, establishes a credible compliance posture, and enters the MVP phase with validated architecture and investor-ready traction.

PHASE-I SCOPE – PROTOTYPE BUILD (MONTHS 1–18)

The Phase-I prototype establishes the technical and regulatory feasibility of ValiDeck's privacy-first transaction architecture. The objective is to demonstrate that line-item transaction data can be captured, linked, and analyzed across merchants without storing personal identifiers.

The Phase-I build will deliver:

- A multi-merchant point-of-sale simulator generating realistic pseudonymized transactions
- A token-issuing microservice generating pseudonymous UIDs and enforcing token lifecycle
- A pseudonymized loyalty and ledger backend linking tokens to rewards without identity exposure
- Merchant analytics with enforced aggregation thresholds to prevent re-identification
- Continuous PIPEDA and GDPR compliance documentation and SR&ED evidence capture

ValiDeck will establish a universal Customer Transaction Record (CTR) schema as the canonical data model for pseudonymized transaction ingestion. Each PoS device, regardless of vendor, will produce CTRs in this standardized format. Within Phase-I, encrypted token flows will be simulated in a manner consistent with the intended card-issuer and payment-network model, ensuring that each CTR is cryptographically linked to a verified but pseudonymous transaction event.

Phase-I implements a jurisdiction-portable PCX reference node. Custodianship, audit authority, key-management policy, and reporting obligations are configurable per jurisdiction without altering the core platform architecture or data model.

During the prototype, PoS systems will connect through an API-based ingestion layer, enabling rapid validation of the CTR schema and token linkage. In later phases, ValiDeck will introduce lightweight PoS-specific connectors or SDKs that embed this logic directly into the terminal or cloud backend, achieving automatic enrollment of merchants once a PoS provider integrates.

This strategy eliminates the need for merchant-by-merchant onboarding, dramatically reducing cost and friction while ensuring privacy compliance and interoperability across diverse retail environments. The completion of Phase-I results in a working reference implementation proving that privacy-compliant cross-merchant analytics is technically achievable without identity collection.

BUDGET ALLOCATION AND SR&ED ELIGIBILITY

The prototype aligns with the Privacy-Compliant eXtensible (PCX) architecture as follows:

- **Custodian Layer:** Simulated card issuer issuing encrypted tokens and jurisdictional salts.
- **Platform Layer:** Secure enclave-based pseudonymization and CTR storage with Integrity Hash chains.
- **Governance Layer:** Automated audit logs, key-rotation proofs, and consent-token validation.

This ensures compliance-by-design, providing verifiable privacy and lawful transparency from inception. The Phase-I prototype will be executed within a fixed budget envelope of USD 1,000,000, aligned to the selected execution jurisdiction. Canada-based execution prioritizes SR&ED eligibility and cost recovery, while Germany-based execution prioritizes institutional co-funding, regulatory proximity, and EU research alignment. When executed in Germany or the EU, Phase-I will operate under an EU-aligned supervisory review model to validate Governance Layer assumptions prior to commercial deployment.

Budget Structure

- Engineering & Product Build — \$700,000
- Partner Integration & Testing — \$200,000
- Compliance & Operations — \$100,000

Total Phase-I Budget — \$1,000,000

SR&ED Recovery Impact

Phase-I is structured so that the substantial majority of engineering expenditure is SR&ED-eligible under the Canadian execution path. The credit is refundable, received after year-end, and does not reduce the capital required up front. The recovery amount depends on final expenditure mix and CRA assessment, and will be confirmed with SR&ED counsel before filing.

The Phase-I prototype is therefore partially offset by anticipated non-dilutive public reimbursement, materially reducing effective capital risk while preserving ownership and control.

INTEGRATION & PILOT-READINESS PHASE (MONTHS 12–24)

Integration engineering begins at month 12 and overlaps the closing stretch of the prototype build, so that connector and SDK work is underway before the prototype is complete. In the program's final six months (months 18–24), that work is converted into integration readiness and investor conviction. The goal of this phase is to exit month twenty-four positioned for a capital raise linked to execution rather than feasibility.

This phase will deliver:

- Architectural hardening for external integrations including boundary contracts and observability
- An SDK-level integration blueprint and reference connector demonstrating standardized CTR ingestion and token linkage for one target PoS ecosystem such as Clover, Square, Ingenico, or Oracle
- A privacy and compliance readiness memorandum aligned with PIPEDA and GDPR and prepared for disclosures
- A merchant pilot playbook defining onboarding logic, access control, consent and risk envelope
- An investor-ready dossier including integration brief, compliance memo, updated deck and demonstration environment

At the end of the program, ValiDeck stands as a pre-MVP integration platform awaiting capital to connect to live rails, not awaiting invention.

STRATEGIC RATIONALE — WHY USD 1M IS SUFFICIENT

The Phase-I prototype resolves the key uncertainties that prevent serious capital or institutional engagement. It eliminates feasibility risk and shifts ValiDeck from conceptual to demonstrable.

Risk Elimination

- Technical feasibility is demonstrated through end-to-end pseudonymized transaction flow
- Privacy feasibility is demonstrated under PIPEDA and GDPR compliance posture
- Economic risk may be partially offset through SR&ED recovery under the Canadian execution path
- Market skepticism is replaced by a working system rather than narrative claims
- Scalable merchant onboarding is prepared through a standardized CTR format and an API/SDK integration model designed to operate at the PoS or payment-network level rather than at the individual merchant level

Value Creation

- A reference architecture for privacy-compliant transaction intelligence is established
- Compliance evidence and documentation are produced in parallel with engineering
- An integration blueprint is prepared to shorten time to first live pilot
- The next capital phase is priced on execution readiness instead of hypothesis

This architecture transforms ValiDeck from an application framework into a regulated trust infrastructure, positioning it as the backbone for lawful, cross-merchant data collaboration under Supervisory Authority oversight. The USD 1M program is therefore not an exploratory exercise but the conversion of a hypothesis into a validated, economically de-risked and investor-ready architecture.

HIRING BRIEF

The following resourcing plan delivers the feasibility prototype within a jurisdiction-aligned Phase-I execution structure. Roles may be filled by Canada-based or Germany/EU-based contributors depending on funding source and institutional requirements. Roles are staffed for the minimum duration required to reach an investor-ready and audit-ready reference implementation, with core build roles engaged full-time during their active execution window. The security and encryption role is the exception: it is scoped as a fractional senior engagement or an academic research partnership across an eleven-month window rather than a full-time hire, and is costed on that basis.

Bucket / Role	Duration	Cost (USD)
Engineering & Product Build	Months 1–18	700,000
Lead Full-Stack Engineer	18 mo	160,000
Backend Engineer	14 mo	110,000
Data / Privacy Engineer	11 mo	100,000
Security / Encryption Specialist	11 mo (fractional)	130,000
DevOps / Cloud SRE	8 mo	60,000
Founder / PM / SR&ED Lead	Full program	110,000
UI/UX & build contingency	As needed	30,000
Partner Integration & Testing	Months 12–24	200,000
Integration Engineer (PoS SDK / connector)	9 mo	110,000
QA / Integration Testing	6 mo	45,000
Integration cloud / test environments	Months 12–24	45,000
Compliance & Operations	Full program	100,000
Independent Privacy & Security Audit	Design + final	45,000
Legal / IP / Administrative	Full duration	35,000
Operations / admin reserve	Full duration	20,000
Total	24-month program	1,000,000

TALENT STRATEGY AND COMPENSATION

Phase-I staffing is designed around the talent segments where ValiDeck's value proposition is strongest, rather than competing directly for engineers holding active offers from large United States technology firms. The plan draws on four complementary sourcing channels:

- Senior engineers anchored in Canada by family, immigration status, or preference, for whom a Waterloo-based, equity-bearing role is attractive on its own terms.
- The substantial pool of skilled permanent residents and recent immigrants across the Waterloo–Toronto technology corridor.
- The University of Waterloo co-op and new-graduate pipeline, accessed through ValiDeck's established Communtech and IPON relationships.
- For the specialized security and encryption (trusted-execution) role, a fractional senior engagement or an academic research partnership, for example with the University of Waterloo's cryptography,

security, and privacy research group under a collaborative research vehicle, matching a globally scarce skill to the minimum footprint the prototype requires.

Compensation blends below-market cash with equity participation for the small number of long-tenure core hires, and cash plus milestone-completion bonuses for short, specialized engagements where standard option vesting would not apply. For core hires structured as employees, options on the company's shares carry Canadian-Controlled Private Corporation (CCPC) tax advantages, including deferral of the taxable employment benefit until the shares are sold, and potential access to the lifetime capital gains exemption on qualifying shares, that improve after-tax value relative to comparable early-stage equity in the United States. Option terms are structured in consultation with Canadian tax counsel.

Core, equity-bearing roles are engaged as T4 employees, aligning with both the CCPC option treatment above and the payroll-based eligibility of SR&ED and NRC-IRAP support; short specialist roles are retained as independent contractors. The employee option pool is sized and finalized within the company's capitalization and financing materials to preserve headroom for a future priced round.

NEXT CAPITAL POSITIONING AND CLOSE

With feasibility, compliance posture and architectural continuity proven inside a USD 1M envelope, the next capital event funds integration and scale rather than invention. The final integration phase ensures ValiDeck does not enter the raise as a concept-stage company, but as a pre-MVP platform with:

- Proven end-to-end architecture operating without personal identifiers
- PIPEDA and GDPR privacy posture validated through documentation and audit readiness
- A de-risked feasibility cost profile, supported in Canada by anticipated SR&ED recovery and in Germany/EU by potential institutional co-funding pathways
- Integration blueprint prepared for a first PoS ecosystem
- Merchant pilot playbook prepared for controlled onboarding
- Investor dossier ready for diligence

The next round is therefore priced against execution rather than uncertainty. Capital enters into an architecture already validated rather than into feasibility risk.

Initial Phase-I execution may occur in Canada or Germany, enabling subsequent EU-stewarded deployment without architectural discontinuity. Subsequent EU deployment will activate the full Governance Layer, linking local custodians under EU-aligned oversight and completing the compliance-by-architecture cycle.