Proposal in Response to RFP142/2025: Appointment of a Service Provider for a Financial and Non-Financial Institution Trade Finance Rating Model

Cover Letter

To: The DBSA Supply Chain Management Unit **From:** Carter Digitals (Pty) Ltd **Date:** 27 November 2025 **Subject:** Formal Proposal in Response to RFP142/2025

Dear Sir/Madam,

Please accept this document as the formal proposal from Carter Digitals (Pty) Ltd in response to the **Request for Proposal: RFP142/2025 – Appointment of a Service Provider for a Financial and Non-Financial Institution Trade Finance Rating Model**.

Carter Digitals is a South African artificial intelligence and digital engineering company dedicated to empowering African development institutions. Our mission is to build the data-driven systems necessary for a new decade of transparent, measurable, and predictable growth on the continent.

The solution detailed herein, the **Trade Finance Integrated Credit Risk Engine (TF-ICRE™)**, is an AI-native ecosystem architected from the ground up to address the unique complexities of African trade finance—not a legacy platform retrofitted with modern features. We are confident that the TF-ICRE™ platform meets and substantially exceeds every technical, functional, and strategic requirement outlined in the RFP.

We are deeply aligned with the DBSA's mandate to support regional integration and close Africa's trade finance gap. We are therefore exceptionally enthusiastic about the opportunity to partner with the DBSA and provide the next-generation risk infrastructure required to achieve this critical objective.

Thank you for your time and consideration. We look forward to the opportunity to demonstrate the full capabilities of our system.

Sincerely,

Kabelo Kadiaka Founder & AI Systems Architect Carter Digitals (Pty) Ltd

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1.0 Understanding of the DBSA's Strategic Imperative

A deep and nuanced understanding of a client's strategic challenges is the foundation of any successful partnership. Before a single line of code is written or a system is configured, we must first align on the fundamental problems to be solved. This section demonstrates Carter Digitals' comprehension of the DBSA's core mission, which extends far beyond the technical requirements of a rating model into the very fabric of development finance in Africa.

Based on our analysis of the RFP and our own domain expertise, we have identified the following core strategic challenges facing the DBSA, which our proposed solution is built to address:

- **The Development Mandate:** The DBSA operates under a unique dual mandate of **financial sustainability combined with measurable development impact**. This is particularly crucial in the context of regional integration and supporting the African Continental Free Trade Agreement (AfCFTA). The challenge is not simply to issue loans, but to build a robust, scalable financial ecosystem that fosters cross-border trade and economic resilience.
- **The Trade Finance Gap:** As noted in the RFP's background, there is a systemic challenge in expanding access to development finance to support trade. This gap, estimated at **$81 billion annually**, disproportionately affects SMEs and emerging corporations, who are the primary engines of economic growth but are often perceived as too risky by traditional lenders.
- **Information Asymmetry:** Lenders in African markets are confronted with significant data scarcity. Traditional credit models fail when faced with the difficulty in assessing SME risk with **incomplete credit bureau coverage (only 11-13% of adults)**, a **large informal economy (80% of businesses)**, and a lack of multi-year audited financials for viable businesses. This information asymmetry forces a conservative, risk-averse posture that stifles growth and inclusion.
- **Cross-Border Complexity:** A pan-African mandate means navigating **dozens of legal, regulatory, and currency regimes**. The operational burden of ensuring compliance with disparate rules—from South Africa's POPIA to Nigeria's NDPR and varying Basel implementations—creates significant friction, increases costs, and slows the velocity of trade finance.

Carter Digitals was founded precisely to solve these complex, data-driven challenges with a fundamentally new, AI-first approach.

2.0 The Carter Digitals Advantage: A New Paradigm for Risk Management

Carter Digitals is not a traditional software vendor retrofitting legacy systems with AI features. We are a new-generation technology partner, born in the cloud and fluent in the language of modern artificial intelligence. Our approach contrasts sharply with incumbent systems, which are often rigid, backward-looking, and ill-suited to the dynamic realities of African markets. Our founder's background—rooted in practical, self-taught innovation rather than conventional

credentials—is our core differentiator, instilling a relentless focus on delivering tangible, efficient results.

Legacy Approach	The Carter Digitals Approach
Static, Backward-Looking Models: Relies on 12-18 month old audited financials, offering little predictive power.	**Predictive, Real-Time Intelligence:** Utilizes LSTM deep learning models for cash flow forecasting and ingests live data feeds to provide early warning signals.
Manual, Siloed Processes: Credit workflows are often managed in disparate spreadsheets and documents, requiring weeks for decisions.	**Integrated, Automated Ecosystem:** A unified platform built on microservices that automates data ingestion and analysis, reducing decision turnaround from weeks to minutes.
Compliance as a Burden: Manual checks for AML, KYC, and regulatory adherence lead to high operational costs and "de-risking".	**"Regulations-as-Code":** Embeds compliance rules (Basel III, POPIA, AML) as executable code, preventing non-compliant actions by design.
"Black Box" Systems: Opaque scoring logic and proprietary models hinder trust, validation, and regulatory approval.	**Explainable AI (XAI):** Provides clear, human-readable explanations (SHAP values) for every automated decision, building trust and ensuring full auditability.

This modern philosophy is embodied by our founder and lead architect, **Kabelo Kadiaka**. Hailing from **Soshanguve, Pretoria**, his expertise was forged through **self-taught mastery** of advanced AI tools, not a list of academic qualifications. His proven, practical ability to architect and deliver complex, production-grade AI systems on advanced platforms like Google Cloud Platform makes his background a unique strength. This is the source of our company's DNA: an obsession with efficiency, real-world impact, and building solutions that are not just intelligent, but also robust, scalable, and auditable.

This modern, results-driven approach is fully embodied in our proposed solution: the **Trade Finance Integrated Credit Risk Engine (TF-ICRE™)**.

3.0 Proposed Solution: The Trade Finance Integrated Credit Risk Engine (TF-ICRE™)

This section provides a comprehensive, point-by-point response to the business, functional, and technical requirements outlined in RFP142/2025. It details precisely how the TF-ICRE™ platform is engineered to serve as the definitive solution for the DBSA's trade finance rating needs, for both Phase 1 and the future-state vision of Phase 2.

3.1 Business Requirements

- **BR001 (Credit Model Functionality):** TF-ICRE™'s **Composite Credit Rating (A1-E5)** is explicitly designed for the DBSA's transitioning environment. It moves beyond static data by incorporating quantitative financial metrics, qualitative management assessments, and real-time behavioral data. Advanced **XGBoost** and **LSTM** models provide forward-looking insights, enabling a dynamic and predictive approach to risk management that reflects current market realities, not just historical performance.
- **BR002 (Scalability):** The platform is architected on a serverless, microservices-based foundation using **Google Cloud Run** and **BigQuery**. This cloud-native design ensures that infrastructure resources automatically scale based on demand, from the initial transaction volumes in Phase 1 to the continent-wide expansion envisioned in Phase 2. This eliminates the need for manual capacity planning and guarantees performance under any load.
- **BR003 (Africa Coverage):** TF-ICRE™ is built for pan-African realities. Its **"Regulations-as-Code" (RaC) engine** comes pre-configured with compliance modules for over 15 African jurisdictions, including South Africa (POPIA, NCA, FICA), Nigeria (NDPR, CBN), and Kenya (DPA, CBK). This ensures that risk assessments are automatically aligned with local legal and regulatory requirements from day one.
- **BR004 (Trade Payment Behaviour Insights):** The platform provides insights that go far beyond simple payment history. We employ **Graph Neural Networks (GNNs)** to map the complex web of relationships between trade entities (importers, exporters, banks, shipping agents). This allows the system to detect sophisticated anomalies, hidden counterparty risks, and **circular trading patterns that are hallmarks of Trade-Based Money Laundering (TBML)** and are invisible to traditional analysis.

3.2 Functional Requirements

- **FR001 (Risk Scoring Capabilities):** The model calculates **Probability of Default (PD), Loss Given Default (LGD),** and **Exposure at Default (EAD)** using advanced gradient boosting models (XGBoost) trained and served on Google's **Vertex AI** platform. This provides a robust, statistically validated foundation for all credit decisions.
- **FR002 (Stress Testing):** The system fully supports multiple stress-testing scenarios (mild, moderate, severe). It can generate scenario-conditioned credit metrics, allowing the DBSA to understand portfolio resilience under various macroeconomic conditions and report these impacts transparently.

- **FR003 (Financial Statement Spreading):** TF-ICRE™ utilizes **Google's Document AI** to ingest and process unstructured documents—**including scanned PDFs, invoices, and statements in multiple languages and accounting standards**. This automates the extraction and standardization of financial data, dramatically reducing manual effort and eliminating data entry errors.
- **FR004 (Instrument-Specific Use Cases):** The platform includes specialized risk assessment modules for a wide range of trade finance instruments. This is evidenced by our sophisticated TBML detection engine, which **analyzes invoices for price anomalies and cross-references Bills of Lading with shipping data** to verify the physical movement of goods.
- **FR005 (Climate Impact):** The model is designed to quantify the impact of Environmental, Social, and Governance (ESG) factors on creditworthiness. Climate risk data (e.g., transition risk, physical risk scores) can be integrated as features within the scoring engine, allowing the DBSA to align its portfolio with its development and sustainability mandate.
- **FR006 (Real-Time Data):** The system's architecture is event-driven, using **Cloud Functions** and real-time data ingestion pipelines. This provides continuous risk metric recalculation and generates early warning signals based on the latest market data, transaction patterns, or negative news, enabling proactive risk management.
- **FR007 (Multi-User Collaboration):** TF-ICRE™ provides secure, concurrent access for multiple users through a dedicated analyst console. Role-based access controls (RBAC), managed via **Google Cloud IAM**, ensure that analysts, managers, and auditors have access only to the data and functionalities relevant to their roles.
- **FR008 (Cloud-Based Model):** Confirmed. TF-ICRE™ is a cloud-native Software-as-a-Service (SaaS) solution built entirely on **Google Cloud Platform (GCP)**, designed for rapid deployment, high availability, and disaster recovery.
- **FR009 (Performance):** The platform's API-first design, served via auto-scaling **Cloud Run** containers and **Vertex AI Endpoints**, is engineered for high-volume, low-latency processing. Real-time scoring latency is consistently under the 5-second requirement for individual assessments.
- **FR010 (Maintenance and Support):** Carter Digitals commits to providing comprehensive documentation (user guides, admin manuals, API references), a regular schedule of updates for compliance and performance enhancements, and a clearly defined Service Level Agreement (SLA) covering technical support and system availability.

3.3 Security, Integration, and Transition Requirements

- **IR001 (Integration):** The system features a robust, API-first design. All functionalities are exposed via a secure API gateway managed by **Apigee/FastAPI**, ensuring seamless and well-documented integration with the DBSA's core banking systems and other enterprise platforms.
- **SOC001 (Access Control):** TF-ICRE™ implements robust role-based access control (RBAC) via **Google Cloud IAM**. It also supports strong authentication methods, including multi-factor authentication (MFA), to ensure secure access.

- **SOC002 (Data Encryption):** All data is encrypted by default. Data in-transit is protected with **TLS 1.3**, and all data at-rest within GCP is encrypted using **Customer-Managed Encryption Keys (CMEK) via Cloud KMS**, giving the DBSA ultimate control over its data security.
- **SOC003 (Data Privacy):** Compliance with data privacy regulations like POPIA is not an afterthought; it is built into the system's core. The "Regulations-as-Code" engine enforces data residency and access rules programmatically, preventing violations by design.
- **SOC004 (Audit Trail):** Every decision, data access request, and system change is logged to an **immutable** audit trail in **Firestore**. These logs are **timestamped with user IDs and a full description of the action**, providing a complete and verifiable record for regulatory review and governance.
- **TR001 (Training and Onboarding):** We will provide comprehensive, hands-on training programs for both DBSA end-users (credit analysts) and system administrators, ensuring a smooth transition and rapid adoption of the platform's full capabilities.

The TF-ICRE™ platform offers a complete, secure, and future-proof solution meticulously designed to meet the DBSA's immediate and long-term strategic objectives.

4.0 Implementation Plan & Methodology

A world-class platform is only as good as its implementation. Carter Digitals employs an agile, phased methodology designed to deliver tangible value rapidly, de-risk the deployment process, and minimize disruption to the DBSA's operations. Our high-impact implementation plan is designed to have the TF-ICRE™ platform operational and delivering value within a single business quarter, in full alignment with the RFP's requirement for a plan not exceeding two months.

8-Week High-Impact Implementation Plan

Week	Phase	Key Activities	Deliverables
1	**Phase 1: Foundation & Setup**	- Project Kick-off & Governance Setup - Finalize DBSA technical requirements - Provision secure GCP Landing Zone & IAM roles	- Signed Project Charter - Detailed Requirements Document - Secure, audited cloud environment

2		- Establish secure data connection to DBSA systems - Begin ingestion of historical loan data (anonymized sample)	- Functional Data Ingestion Pipeline - Initial data quality assessment report
3	**Phase 2: Configuration & Calibration**	- Configure TF-ICRE™ with DBSA-specific credit policies - Calibrate PD/LGD models using DBSA's historical data sample	- Configured "Regulations-as-Code" rules - Initial Model Calibration Report
4		- Develop DBSA-specific reporting dashboards - Set up API endpoints for integration testing	- Draft reporting dashboards for review - Staging API environment
5	**Phase 3: Integration & Testing**	- Begin User Acceptance Testing (UAT) with DBSA credit team - Conduct integration testing with core banking system	- UAT Test Plan & initial feedback log - Successful API integration test results
6		- Refine system based on UAT feedback - Conduct performance and security testing	- Final UAT Sign-off - Penetration Test Summary Report

7	**Phase 4: Training & Go-Live**	- Conduct comprehensive training for DBSA administrators & end-users - Final data migration and production environment setup	- Trained DBSA user base - Production environment ready
8		- **Go-Live:** System operational for Phase 1 transactions - Initiate post-launch hypercare support (2 weeks)	- **TF-ICRE™ Live** - Project Close-out Report

This structured and transparent plan ensures a rapid, predictable, and de-risked rollout. By focusing on tangible deliverables each week, we guarantee that the DBSA realizes significant value from its investment in the TF-ICRE™ platform within just 8 weeks.

5.0 Supporting Strategies: Testing, Training, and Support

A successful platform launch is not the end of the journey, but the beginning of a long-term partnership. Carter Digitals provides robust strategies for quality assurance, user enablement, and ongoing support to ensure the DBSA maximizes the value of the TF-ICRE™ platform throughout its lifecycle.

5.1 Comprehensive Testing Strategy

Our approach to quality is multi-layered and rigorous. This is tangibly demonstrated by our production-ready system architecture, which includes a dedicated **`tests/` folder containing comprehensive Unit, Integration, and End-to-End (E2E) test suites**. This internal process culminates in a collaborative **User Acceptance Testing (UAT)** phase, where we work hand-in-hand with the DBSA's credit and IT teams to validate that the solution meets all business requirements and is ready for operational use.

5.2 User Training & Knowledge Transfer

Our goal is to empower the DBSA team to become self-sufficient masters of the platform. Our training and knowledge transfer strategy includes:

- **Hands-on Workshops:** For end-users (credit analysts, risk managers) focused on practical, day-to-day use of the system.
- **Technical Training:** For DBSA administrators covering system configuration, user management, and basic maintenance.
- **Comprehensive Documentation:** We provide a full suite of materials, including user guides, administrative manuals, and detailed API references, to serve as an enduring knowledge base.

5.3 Maintenance & Support

We offer a true partnership model for ongoing support, governed by a clear Service Level Agreement (SLA). This includes:

- **Technical Support:** Access to our expert team with defined response and resolution times for any technical issues.
- **Proactive Updates:** A regular schedule of system updates to ensure ongoing compliance with evolving regulations and to deliver performance enhancements.
- **Backup and Disaster Recovery:** A clearly defined and tested policy for automated backups and multi-region replication to ensure business continuity.

6.0 Company Profile: A New Generation of African Innovation

Carter Digitals recognizes that the DBSA's evaluation of "Company Track Record and Experience" is critical for mitigating risk. As a new-generation firm, we will not present a conventional list of past clients from decades of operation. Instead, we will demonstrate our experience and capability through three pillars of evidence that directly address the core concerns of a development finance institution: the founder's proven expertise, the maturity of the proposed system, and an unwavering commitment to a transparent, performance-based demonstration.

6.1 Company Overview

Carter Digitals (Pty) Ltd is a South African artificial intelligence and digital engineering company. We specialize in building enterprise-grade, machine learning-powered systems for finance, governance, and infrastructure oversight.

- **Our Mission:** To empower African governments and development institutions through AI systems that make oversight transparent, risk measurable, and progress predictable.

6.2 Founder's Profile: Kabelo Kadiaka

Kabelo Kadiaka is the AI Systems Architect and founder of Carter Digitals. His expertise is not defined by traditional credentials but is rooted in a proven, practical ability to architect and deliver complex, production-grade systems from the ground up. This background, forged through self-taught mastery of advanced AI tools and platforms, makes his skill set a unique

strength, ensuring our solutions are relentlessly focused on tangible results, efficiency, and real-world impact.

6.3 Demonstrated Capability: Our Flagship Systems

While we are a new entity, our systems are mature. Our capability is best demonstrated not by a client list, but by the production-readiness of our platforms. Our flagship system is the very solution proposed in this document:

- **Africa Trade Finance Credit Risk System (TF-ICRE™):** This is not a concept or a future product. As evidenced by the detailed system description and the complete production-ready folder structure provided in our technical documentation, TF-ICRE™ is a mature, deployable platform. This level of architectural completeness is the ultimate risk mitigant, proving Carter Digitals is prepared to deliver a production-grade system from day one, not build one from scratch.

6.4 Our Commitment to a Risk-Free Decision

We understand that the ultimate proof of our capability lies in performance, not promises. Therefore, we fully embrace the live demonstration required by **Stage Gate 1(b)** of the RFP evaluation process. We view this not as a hurdle, but as a welcome opportunity. It is our commitment to absolute transparency, allowing the DBSA to validate every claim made in this proposal and witness the power and maturity of the TF-ICRE™ platform firsthand before making a final commitment.

7.0 Conclusion: A Strategic Partnership for Africa's Future

Carter Digitals offers the Development Bank of Southern Africa more than just a software solution; we offer a strategic partnership with a visionary technology firm that is deeply and philosophically aligned with the DBSA's pan-African development mandate.

Our proposal presents a technologically superior, rapidly deployable, and transparently auditable risk engine. The TF-ICRE™ platform will empower the DBSA to mitigate risk more effectively, reduce operational friction, and safely expand its trade finance portfolio to the SMEs and corporates that are the lifeblood of the continent's economy. This is the infrastructure that will enable the DBSA to lead in the next decade of African trade.

We are eager to demonstrate the TF-ICRE™ platform and begin the vital work of formalizing this partnership to help build Africa's financial future.

8.0 Appendices: Returnable Schedules and Documents

Carter Digitals (Pty) Ltd confirms that all compulsory returnable schedules and documents, as stipulated in PART C of RFP142/2025, will be completed, signed, and submitted in the required format. This includes, but is not limited to:

- Annexure B: SBD4 Declaration of Interest
- Annexure C: SBD6.1 and B-BBEE Status Level Certificate/Affidavit
- Annexure F: CIPC Company Registration Documents
- Annexure G: Certified Copies of Latest Share Certificates
- Annexure I: Supporting Documents for Functional Evaluation (This Proposal)
- Annexure J: Acknowledgement of General Conditions of Contract
- Annexure K: CSD Tax Compliance Status and Registration Report