NORTHERN CORRIDOR TRANSIT AND TRANSPORT COORDINATION AUTHORITY

1196 Links Road, Nyali, P.O Box 34068 – 80118, Mombasa, Kenya
Email: *procurement@ttcanc.org*
Website: *www.ttcanc.org*

REQUEST FOR PROPOSALS

CONSULTANCY SERVICES **Modernization and Redevelopment of the Northern Corridor Transport Observatory Toolkit for the Northern Corridor Transit and Transport Coordination Authority (NCTTCA)**

TENDER CLOSING DATE: 11 September 2026

August 2026

REQUEST FOR PROPOSALS (RFP)

RFP No.: TTCA/SP/6/476/JL/mj

REQUEST FOR PROPOSALS

NORTHERN CORRIDOR TRANSIT AND TRANSPORT COORDINATION AUTHORITY (NCTTCA) intends to procure Consultancy Services for *Modernization and Redevelopment of the Northern Corridor Transport Observatory Toolkit for the Northern Corridor Transit and Transport Coordination Authority (NCTTCA),* for which this Request for Proposals (RFP) is issued.

NCTTCA now invites qualified Consulting Firms, to submit a combined Technical and Financial Proposal for the following Services: *Modernization and Redevelopment of the Northern Corridor Transport Observatory Toolkit for the Northern Corridor Transit and Transport Coordination Authority (NCTTCA).* More details on the services are provided in the attached Terms of Reference (TOR) Section IV.

This is a two - stage competitive bidding process, based on which the firms whose Technical Proposals meet the minimum pass mark will be invited to provide passwords for opening their Financial Proposals for evaluation and consolidation of overall marks, before negotiations and award of Contract.

The RFP includes the following documents:

Section I.	Instructions to Consulting Firms
Section II.	Technical Proposal – Standard Forms
Section III.	Financial Proposal – Standard Forms
Section IV.	Terms of Reference
Section V.	High Level User Requirements
Section VI.	Standard Form of Contract

The combined Proposal must be delivered by hand or through mail to NCTTCA on ***1196 Links Road, Nyali, P.O. Box 34068 – 80118 Mombasa, Kenya. Email*** procurement@ttcanc.org. by **11 September 2026** by **1700Hours**, Kenya Time.

NCTTCA reserves the right to accept or reject any proposal at any time prior to contract award, without thereby incurring any liability to the affected Consultant.

11/8/2026

Mr. Lodi Joseph Sartison Batali
For Executive Secretary

Contents

Section I: Instructions to Consulting Firms

Summary Instructions

Qualified Firms are now invited to download the RFP bid documents from our website.

TECHNICAL AND FINANCIAL EVALUATIONS:

INSTRUCTIONS TO BIDDERS
Name of the Client: **NORTHERN CORRIDOR TRANSIT AND TRANSPORT COORDINATION AUTHORITY**
Financial Bid to be submitted together with Technical Proposal: **YES, BUT IN SEPARATE FILES. THE FINANCIAL BID IN PDF SHOULD BE PASSWORD PROTECTED. ONCE THE FIRM HAS QUALIFIED IN TECHNICAL EVALUATIONS, NCTTCA WILL NOTIFY AND REQUEST FOR THE PASSWORD.** Name of the assignment is: **Ref. TTCA/SP/6/476/JL/mj - Modernization and Redevelopment of the Northern Corridor Transport Observatory Toolkit for the Northern Corridor Transit and Transport Coordination Authority (NCTTCA).**
The Client's representative is: **Executive Secretary,** Address: ***1196 Links Road, Nyali, P.O. Box 34068 – 80118 Mombasa, Kenya.*** ***Email*** procurement@ttcanc.org
The Proposal Validity Period shall be: **90 days**
Clarifications may be requested not later than: **7 (seven) days before the submission date**. The address for clarification on bid document: procurement@ttcanc.org
Bidders must submit prices exclusive of taxes as the institution is tax exempt
Prices quoted shall be in **US Dollars**
The BID will be sent by email to procurement@ttcanc.org as 2 separate files. The Financial bid shall be in PDF and with a password.

The Proposal submission will be by ***Email to:*** procurement@ttcanc.org
Proposals must be submitted no later than the following date and time: **11 September 2026 at 1700 hours** (Late Proposals shall not be accepted).
Attendance at Opening: **The bidders will not attend the opening of the bids.**

Introduction

2.1 Qualified Consulting Firms are invited to submit Technical and Financial Proposals for the services required under the subject matter indicated above.

2.2 The Consulting Firm should familiarize themselves with local conditions and take them into account in preparing and submitting their Bids.

2.3 The Consulting Firm's costs of preparing the proposal and of negotiating the Contract, are not reimbursable as a direct cost of the assignment.

2.4 The Consulting Firm shall not be hired for any assignment that would conflict with their prior or current obligations to other procuring entities, or that may place them in a position of not being able to carry out the assignment in the best interest of NCTTCA and its partners.

2.5 NCTTCA is not bound to accept any proposal and reserves the right to annul the engagement process at any time prior to contract award, without thereby incurring any liability to the Consulting Firm.

2.6 NCTTCA shall provide at no cost to the Consulting Firm the necessary inputs and facilities, and assist the Firm in obtaining licenses and permits needed to carry out the services and make available relevant project data and reports (see Section IV. Terms of Reference).

Corrupt, Fraudulent, and Coercive Practices

3.1 NCTTCA Policy requires that all NCTTCA Staff, bidders, manufacturers, suppliers or distributors, observe the highest standard of ethics during the procurement and execution of all contracts. NCTTCA shall reject any proposal put forward by bidders, or where applicable, terminate their contract, if it is determined that they have engaged in corrupt, fraudulent, collusive or coercive practices. In pursuance of this policy, NCTTCA defines for purposes of this paragraph the terms set forth below as follows:

- Corrupt practice means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the action of the Procuring/Contracting Entity in the procurement process or in contract execution;

- Fraudulent practice is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, the Procuring/Contracting Entity in the procurement process or the execution of a contract, to o btain a financial gain or other benefit to avoid an obligation;

- Collusive practice is an undisclosed arrangement between two or more bidders designed to artificially alter the results of the tender procedure to obtain a financial gain or other benefit; and

- Coercive practice is impairing or harming, or threatening to impair or harm, directly or indirectly, any participant in the tender process to influence improperly its activities in a procurement process, or affect the execution of a contract.

Clarifications and Amendments to the RFP Documents

4.1 At any time before the submission of the Bids, NCTTCA may, for any reason, whether at its own initiative or in response to a request for clarification, amend the RFP. Any amendment made will be made available to all the Bidders who shall have acknowledged the Letter of Invitation for RFPs.

4.2 Bidders may request for clarification(s) on any part of the RFP. The request must be sent in writing or by standard electronic means and submitted to NCTTCA at the address indicated in the invitation at least (7) calendar days before the set deadline for submission and receipt of Bids. NCTTCA will respond in writing or by standard electronic means to the said request and this will be made available to all those who acknowledged the Letter of Invitation without identifying the source of the inquiry.

Preparation of the Bids

5.1 The Consulting Firm's Bid shall have two (2) components:

a) the Technical Proposal, and

b) the Financial Proposal.

5.2 The Proposal, and all related correspondence exchanged by the Consulting Firms and NCTTCA, shall be in *English*. All reports prepared by the contracted Service Provider/Consulting Firm shall, be in *English*.

5.3 The interested Bidders are expected to examine in detail the documents constituting this Request for Proposals. Material deficiencies in providing the information requested may result in rejection of a Bid.

Technical Proposal

1.1 When preparing the Technical Proposal, the Bidders must give particular attention to the following:

a) Bidders will be expected to express their interest in undertaking this assignment and in so doing, they will have to demonstrate their capacity and experience in undertaking similar assignments.

b) If the Bidder feels that it does not have all the expertise for the assignment, it may obtain a full range of expertise by associating with individual consultant(s) and/or other consultants or entities in a joint venture or sub-consultancy, as appropriate. In case of a joint venture, all partners shall be jointly and severally liable and shall indicate who will act as the leader of the joint venture.

c) It is desirable that most of the key professional staff proposed be permanent employees of the firm or have an extended and stable working relationship with it.

d) Proposed professional staff must, at a minimum, have experience as detailed in the ToRs below.

1.2 The Technical Proposal shall provide the following information using the attached Technical Proposal Standard Forms TECH 1 to TECH 6 (Section II).

a) A description of the approach, methodology and work plan for performing the assignment (TECH-3). This should normally consist of maximum of ten pages including charts, diagrams, and comments and suggestions, if any, on Terms of Reference and counterpart staff and facilities. The work plan should be consistent with the work schedule (TECH-7)

b) The list of proposed Professional Staff team by area of expertise, the position and tasks that would be assigned to each staff team member (TECH-4).

c) Latest CVs signed by the proposed professional staff and the authorized representative submitting the proposal (TECH-5).

d) A time schedule estimate of the total firm input to carry out the assignment, supported by a bar chart diagram showing the time proposed for each Professional and Staff team members (TECH–6).

e) A time schedule (bar chart) showing the time proposed to undertake the activities indicated in the work plan (TECH-7).

Financial Proposal

1.3 In preparing the Financial Proposal, the consulting firms are expected to take into account the requirements and conditions outlined in the ToR. The Financial Proposal shall follow the Financial Proposal Standard Forms FPF 1 to FPF 5 (Section III).

1.4 The Financial proposal shall include all preliminary costs associated with the assignment. If appropriate, these costs should be broken down by activity. All items and activities described in the technical proposal must be priced separately; activities and items in the Technical Proposal but not priced shall be assumed to be included in the prices of other activities or items.

1.5 The Consulting Firm may be subject to local taxes on amounts payable under the Contract. Taxes, however, shall not be included in the sum provided in the Financial Proposal as this will not be evaluated, but they will be discussed at contract negotiations, and applicable amounts will be included in the Contract.

1.6 The Consulting Firm shall express the price of their services in *USD*.

1.7 The Financial Proposal shall be valid for *90 calendar days*. During this period, the Service Provider/Consulting Firm is expected to keep available the professional staff for the assignment. NCTTCA will make its best effort to complete the full RFP process and negotiations and determine the award within the validity period. If NCTTCA wishes to extend the validity period of the proposals, the Service Provider/Consulting Firm has the right not to extend the validity of the proposals.

Submission, Receipt, and Opening of Proposals

1.8 Consulting Firms may only submit one proposal.

1.9 The original Proposal (combining both Technical and Financial Proposals) shall be prepared in indelible ink. It shall contain no overwriting, except as necessary to correct errors made by the Consulting Firm itself. Any such corrections or overwriting must be initialed by the person(s) who signed the Proposal.

1.10 The Consulting Firm shall submit an original soft version of the combined proposal for both Technical and Financial Proposals, which shall be marked "Original".

1.11 The original Proposal shall be sent to: procurement@ttcanc.org

1.12 The Proposal must be received by NCTTCA at the place, date and time indicated in the invitation to submit or any new place and date established by the NCTTCA.

Evaluation of the Proposal

1.13 If any objection will be raised on the Technical Proposal, NCTTCA will evaluate the cost proposed against the assignment planned budget and make a decision immediately.

Technical and Financial Evaluations

Proposal Evaluation Process

Evaluation of bids shall be done as follows:

Preliminary Evaluation/ Mandatory Requirements	Verification
Complete Proposals (Technical and Financial)	
Financial Proposal (password Protected)	
Company Registration Certificate	
Tax Compliance Certificate	

Technical & Financial Proposal evaluation will be carried out.

Evaluations will follow a 2 - step process:

Step 1: Technical Proposal Evaluation: Proposals will be evaluated against the criteria set out below. The Financial Proposal for bidders whose Technical Proposals are evaluated as scoring a minimum score of 80% will be eligible for Financial Proposal Evaluation.

Step 1: Technical Evaluation

Technical Evaluation Criteria	Allotted Maximum Score
1. Specific Experience of the Consulting Firm Relevant to the Assignment.	**40**
a) Successfully completed at least two (2) comparable assignments involving the design, development, and deployment of web-based performance monitoring, data analytics, business intelligence, or observatory platforms within the last five (5) years.	15
b) Evidence of successful implementation of integrated data management solutions incorporating ETL/ELT pipelines, API-based integration with multiple data sources, and automated data processing workflows.	15
c) Evidence of successful implementation of **mobile-based data collection and incident management solutions** supporting configurable questionnaires, offline data capture and synchronization, and real-time incident management.	10
2. Understanding of the Proposed Methodology and Work Plan (Detailed work plan, understanding of TOR, risk mitigation measures, change management approach, and proposed delivery within 6 months)	**40**

a) Demonstrated understanding of the project objectives, scope, existing limitations of the current NCTO Toolkit, and the vision for the proposed Smart Corridor Performance Platform.	10
b) Quality and suitability of the proposed solution architecture, including system integration, interoperability, scalability, and alignment with the functional and technical requirements.	10
c) Quality and appropriateness of the proposed implementation methodology, including development approach, proposed open-source technology stack, data migration strategy, testing and deployment approach, and security framework.	10
d) Adequacy and feasibility of the proposed work plan, implementation schedule, resource allocation, on-site engagement, risk management, quality assurance, and delivery within the required six (6) months.	5
e) Quality of the proposed approach to change management, user training, knowledge transfer, piloting, production deployment, and post-implementation support and maintenance, including a draft Service Level Agreement (SLA).	5
3. Key Professional Staff Qualifications and Competence for the Assignment	**20**
a) Project Manager – education, years of experience, and relevant similar assignments.	4
b) Business Analyst / Systems Architect – education, experience, and relevant similar assignments.	2
c) Data Engineer – education, experience in data warehousing, ETL/ELT, and Business Intelligence platforms and dashboards	4
d) Backend Developer – education, experience, and relevant similar assignments.	3
e) Front-end / UI/UX Expert – education, experience, and relevant similar assignments.	2
f) Mobile Developer – education, experience in Android/iOS, offline sync, and form-based data collection.	3
g) QA / Test Engineer – education, experience in comprehensive testing (unit, integration, system, security, stress, UAT) of web and mobile applications.	2

The minimum Raw Technical Score (T) required to qualify for the Financial Proposal

Evaluation is 80 points out of 100 (80%).

For purposes of calculating the Final Combined Score, the Technical Score shall be weighted as follows:

$$\mathrm{Ts} = \frac{\mathrm{T}}{100} \times 80$$

Where:

- **T** = Raw Technical Score (maximum 100)
- **Ts** = Weighted Technical Score (maximum 80)

Technical and Financial Weights

Technical proposal weight: **80%**

Financial proposal weight: **20%**

Step 2: Financial Proposal Evaluation

Financial Proposals of only those bidders who attain the minimum Raw Technical Score (T) of 80 points shall be opened and evaluated. The lowest evaluated Financial Proposal (Fm) shall be awarded the maximum financial score (Sf) of 20.

The Financial Score (Sf) for all other qualified bidders shall be calculated using the following formula:

$$\mathrm{Sf} = 20 * \frac{\mathrm{Fm}}{\mathrm{F}}$$

Where:

- **Sf** = Financial Score of the Proposal under evaluation
- **Fm** = Lowest evaluated Financial Proposal among the technically qualified bidders
- **F** = Financial Proposal of the bidder under evaluation

Step 3: Final Combined Score

The Final Combined Score (**S**) shall be calculated as follows:
S=Ts+Sf

Where:

- **S** = Final Combined Score
- **Ts** = Technical Score (maximum 80)
- **Sf** = Financial Score (maximum 20)

The bidder obtaining the **highest Final Combined Score (S)** shall be ranked first and invited for contract negotiations.

Proposals are ranked according to their combined technical (Ts) and financial (Sf) scores.

Completed RFP documents in pdf format clearly marked with the tender number and submitted in the manner prescribed in this RFP document, should be addressed to:

The Executive Secretary
NCTTCA
P.O. Box 34068 – 80118
Mombasa, Kenya
1196 Links Road, Nyali
Email: procurement@ttcanc.org

Section II: Technical Proposal Standard Forms

TECH-1: Technical Proposal Submission Form

[Location, Date]

To: [Executive Secretary, NCTTCA]

Dear Sir

We, the undersigned, offer to provide the Services for [insert Title of consulting services] in accordance with your Request for Proposal (RFP) dated [insert Date] and our Proposal. We are hereby submitting our Proposal, which includes the Technical and Financial Proposals combined in one document.

If negotiations are held after the period of validity of the Proposal, we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from Contract negotiations.

We acknowledge and accept NCTTCA's right to inspect and audit all records relating to our Proposal irrespective of whether we enter into a contract with NCTTCA as a result of this proposal or not.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature:
Name and Title of Signatory:
Name of Firm:
Address:

TECH – 2: Consulting Firms Organization

[Provide here brief (maximum two pages) description of the background and organization of your firm/entity and each associate for the assignment (if applicable).]

TECH – 3: Description of the Approach, Methodology and Work Plan for Performing the Assignment

[The description of the approach, methodology and work plan should normally consist of 10 pages, including charts, diagrams, and comments and suggestions, if any, on Terms of reference and counterpart staff and facilities.]

TECH – 4: Team Composition and Task Assignments

1. Technical/Managerial Staff		
Name	Position	Task

2. Support Staff		
Name	Position	Task

TECH – 5: Format of Curriculum Vitae (CV) for Proposed Professional Staff

Proposed Position: ____________________

Name of Firm: ____________________

Name of Staff: ____________________

Profession: ____________________

Date of Birth: ____________________

Years with Firm/Entity: ____________________ Nationality: ____________________

Membership in Professional Societies: ____________________

____

Detailed Tasks Assigned: ____________________

____

Key Qualifications:

[Give an outline of staff member's experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations. Use about half a page.]

____

Education:

[Summarize college/university and other specialized education of staff member, giving names of schools, dates attended, and degrees obtained. Use about one quarter of a page.]

____

Employment Record:

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employing organizations, titles of positions held, and locations of assignments. For experience in last ten years, also give types of activities performed and client references, where appropriate. Use about two pages.]

____

Languages:

[For each language indicate proficiency: excellent, good, fair, or poor in speaking, reading, and writing.]

____

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

____Date: __________

[Signature of staff member and authorized representative of the firm] *Day/Month/Year*

Full name of staff member: ____________________________________

Full name of authorized representative: _________________________

TECH-6: Time Schedule for Professional Personnel

			Months (in the Form of a Bar Chart)												
Name	Position	Reports Due/Activities	1	2	3	4	5	6	7	8	9	10	11	12	Number of Months
															Subtotal (1) ______________
															Subtotal (2) ______________
															Subtotal (3) ______________
															Subtotal (4) ______________

Full-time: ________ Part-time: ___________

Reports Due: ________

Activities Duration: __________

Location __________

Signature of Authorized Representative:

Full Name:

Title:

TECH-7: Activity (Work) Schedule

A. Field Investigation and Other Activities														
No.	**Activity/Work Description**	***Duration***												
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	
1														
2														
3														
4														
5														

B. Completion and Submission of Reports

Reports	**Date**

Section III. Financial Proposal - Standard Forms

FPF-1: Financial Proposal Submission Form

[Location, Date]

To: *[Executive Secretary, NCTTCA]*

Ladies/Gentlemen:

We, the undersigned, offer to provide the consulting services for [insert Title of consulting services] in accordance with your Request for Proposal (RFP) dated [insert date] and our Proposal (Technical and Financial Proposals). Our attached Financial Proposal is for the sum of [Amount in words and figures]. This amount is exclusive of the local taxes, which we have estimated at [Amount(s) in words and figures].

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of [insert validity period] of the Proposal.

We acknowledge and accept the NCTTCA right to inspect and audit all records relating to our Proposal irrespective of whether we enter into a contract with the NCTTCA as a result of this Proposal or not.

We confirm that we have read, understood and accept the contents of the Instructions to Consulting Firms (ITC), Terms of Reference (TOR), the Draft Contract, the provisions relating to the eligibility of Service Providers/ Consulting Firms, any and all bulletins issued and other attachments and inclusions included in the RFP sent to us.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,
Authorized Signature:
Name and Title of Signatory:
Name of Firm:
Address:

FPF– 2: Summary of Costs

Costs	Currency	Amount(s)
I – Remuneration Cost (see FPF- 3 for breakdown)		
II - Reimbursable Cost (see FPF – 4 for breakdown)		
Total Amount of Financial Proposal [1]		

[1] Indicate total costs, net of local taxes, to be paid by NCTTCA in each currency. Such total costs must coincide with the sum of the relevant subtotal indicated in all Forms FPF-3 provided with the Proposal.

Authorized Signature:

Name and Title of Signatory:

FPF-3: Breakdown of Costs by Activity

Group of Activities (Phase):[2] ____________ ____________	Description: [3] ____________ ____________	
Cost Component	Costs	
	Currency	Amount
Remuneration [4]		
Reimbursable Expenses [4]		
Subtotals		

1. Form FPF3 shall be filed at least for the whole assignment. In case some of the activities require different modes of billing and payment (e.g. the assignment is phased, and each phase has a different payment schedule), the Service Provider/ Consulting Firm shall fill a separate Form FPF-3 for each Group of activities.
2. Short description of the activities whose cost breakdown is provided in this Form.
3. For each currency, Remuneration and Reimbursable Expenses must coincide with relevant Total Costs indicated in FPF-4 and FPF-

Authorized Signature:
Name and Title of Signatory:

FPF-4: Breakdown of Remuneration per Activity

[Information provided in this Form should only be used to establish payments to the Service Provider/ Consulting Firm for possible additional services requested by Client/NCTTCA]

Name of Staff	**Position**	**Staff-month Rate**
Professional Staff		
1.		
2.		
3.		
4.		
5.		
Support Staff		
1.		
2.		
3.		
4.		
5.		

[1] Short description of the activities whose cost breakdown is provided in this Form.

Authorized Signature:
Name and Title of Signatory:

FPF-5: Breakdown of Reimbursable Expenses

[Information provided in this Form should only be used to establish payments to the Service Provider/ Consulting Firm for possible additional services requested by Client/NCTTCA]

Description[1]	**Unit**	**Unit Cost[2]**
1. Subsistence Allowance		
2. Transportation Cost		
3. Communication Costs		
4. Printing of Documents, Reports, etc.		
5. Equipment, instruments, materials, supplies, etc.		
6. Office rent, clerical assistance		

[1] Delete items that are not applicable or add other items according to Paragraph 7.2 of Section II-Instruction to Service Providers/ Consulting Firms
[2] Indicate unit cost and currency.

Authorized Signature:
Name and Title of Signatory:

Section IV: Terms of Reference (ToR)

Modernization and Redevelopment of the Northern Corridor Transport Observatory Toolkit for the Northern Corridor Transit and Transport Coordination Authority (NCTTCA)

1. Introduction

The Northern Corridor Transit and Transport Coordination Authority (NCTTCA) is an Intergovernmental Organization established under the legal framework of the Northern Corridor Transit and Transport Agreement (NCTTA) to coordinate the implementation of the treaty and decisions/ resolutions reached by policy organs of the Authority. The Agreement mandates NCTTCA to promote seamless movement of trade and traffic and foster an efficient and cost-effective transit transport system across the corridor.

NCTTCA's mission is to contribute to the sustainable social and economic development of its Member States through an integrated transport system that promotes national, regional, and international trade.

To monitor corridor performance and support evidence-based policy formulation, NCTTCA established the **Northern Corridor Transport Observatory (NCTO)**. The Observatory provides a comprehensive performance monitoring framework that measures the efficiency and effectiveness of the corridor through a set of Key Performance Indicators (KPIs). The NCTO Online Toolkit, accessible at **https://top.ttcanc.org/**, serves as the primary platform for collecting, analyzing, and disseminating corridor performance information. The platform currently monitors over 40 performance indicators covering traffic volumes and capacity, productivity and efficiency, transit times and delays, transport costs and rates, infrastructure performance, road safety, intra-regional trade and GHG emissions.

The current toolkit comprises four key components: an online dashboard for visualization and reporting, a Geographic Information System (GIS) for spatial analysis, an indicators portal for accessing and monitoring performance data, and a mobile application for field data collection and real-time synchronization with the central platform.

1.1 Definitions and Abbreviations

The following abbreviations and terms are used throughout this Terms of Reference:

Abbreviation	Definition
API	Application Programming Interface
BRD	Business Requirements Document
CMS	Content Management System
ETL/ELT	Extract, Transform, Load / Extract, Load, Transform

GIS	Geographic Information System
KPI	Key Performance Indicator
NCTO	Northern Corridor Transport Observatory
NCTTCA	Northern Corridor Transit and Transport Coordination Authority
SLA	Service Level Agreement
SRS	System Requirements Specification
UAT	User Acceptance Testing

2. Project Background

While the NCTO Online Toolkit has contributed meaningfully to corridor performance monitoring, the current platform exhibits several structural and technical shortcomings that constrain its effectiveness. Among others, the key limitations include:

Constraint Area	Specific Limitations
System Integration	Lacks API versatility, restricting seamless data sharing and automated exchange with other transport and trade platforms
Data Timeliness	KPI updates remain delayed after data uploads, preventing timely reflection of current corridor conditions
User Experience	Interface is complex and non-intuitive, particularly for non-technical users, reducing overall usability and adoption
Performance	Slow responsiveness dependent on outdated technology
Scalability	Cannot readily accommodate new data models or additional data sources
Data Processing	Relies on manual data processing mechanisms rather than automated pipelines
Mobile Compatibility	The mobile application is not fully compatible with multiple Android and iOS versions, limiting device coverage and operational reliability across the corridor.
Real-Time Incident Reporting	The mobile application does not support real-time reporting of corridor incidents, limiting timely detection and response to disruptions.

Offline Functionality	The mobile application lacks robust offline data collection and automatic synchronization capabilities, reducing effectiveness in areas with limited or no network connectivity.

These constraints collectively undermine the delivery of an effective and user-friendly system for generating KPI reports from available data. They further restrict the integration of new data sources and the incorporation of analytical or reporting models that would support more sophisticated corridor analysis.

To address these challenges and gaps and meet the growing demand for intelligent, data-driven corridor management, NCTTCA intends to upgrade the existing NCTO Online Toolkit into a modern Smart Corridor Performance Platform. The enhanced platform will leverage advanced business intelligence, automated data integration, models integration, and mobile technologies to provide:

- Near real-time monitoring
- Advanced decision support
- Improved user experience
- Scalable and sustainable architecture capable of supporting current and future corridor performance monitoring needs.

3. Proposed Solution Architecture

The enhanced NCTO Online Toolkit shall adopt a modular, scalable, and interoperable architecture capable of supporting current and future business requirements. The solution shall enable seamless integration with multiple internal and external data sources, facilitate automated data processing, and support the incorporation of new performance indicators, analytical models, and reporting capabilities without requiring system redesign.

The solution shall be deployed within the existing on-premises ICT infrastructure of the Northern Corridor Transit and Transport Coordination Authority (NCTTCA). The proposed architecture shall comprise, at a minimum, the following functional components:

Module	Function
Data Acquisition	Automated collection of data through APIs, file-based integrations, and other approved data exchange mechanisms.
Data Storage and Management	Centralized, secure repository for storing and managing operational and analytical data.
ETL/ELT Processing	Automated extraction, transformation, validation, and loading of data from multiple sources.
Analytical and Model Integration	Integration of analytical models

Reporting and Visualization	Interactive dashboards, reports, and KPI monitoring tools for decision support.
Mobile Data Collection	Mobile application for field data collection, real-time incident reporting, offline data capture, and synchronization with the central platform; together with a backend management console for administering field users, designing, and managing questionnaires/surveys, managing submitted data, and tracking the status of reported incidents with reporting capabilities.
API and Integration Services	Secure APIs and integration services to enable interoperability with partner systems and third-party applications.
Security and User Management	Authentication, authorization, role-based access control, audit trails, and data security mechanisms.

4. Objectives

The objective of this assignment is to review, redesign, develop, and deploy an enhanced Northern Corridor Transport Observatory (NCTO) Online Toolkit that provides a modern, secure, scalable, and user-friendly platform for corridor performance monitoring, spatial analysis, reporting, and field data collection.

Specifically, the assignment seeks to:

- Review the existing NCTO Toolkit and refine the functional and technical requirements.
- Develop an integrated web-based platform comprising dashboard and indicator analytics portal, performance indicator management, and a mobile application for field data collection and incident reporting.
- Improve interoperability through secure APIs and automated data integration with partner systems.
- Enhance system performance, scalability, security, and user experience using contemporary open-source technologies.
- Migrate existing data and functionalities to the upgraded platform with minimal disruption.
- Conduct comprehensive testing, user training, piloting, and production deployment.
- Provide complete technical and user documentation together with a one-year Support and Maintenance Service Level Agreement (SLA) to ensure sustainability of the solution.

5. Scope of work

5.1. General Scope

This assignment will include a comprehensive review of all available documentation, the current systems and processes, and structured engagement with the relevant team. The purpose of this review is to develop a clear understanding of the limitations of the existing system and the expected needs for the enhancement process. Reviews will be conducted throughout the life of the assignment and as new needs emerge. The insights gained will support all stages of the assignment, from requirements definition through to support and maintenance.

5.2. Specific Scope

Inception Report:

The assignment shall commence with the preparation and submission of an Inception Report. The report shall present the consultant's understanding of the assignment and provide a detailed implementation plan outlining the approach, methodology, work plan, timelines, resource allocation, and quality assurance measures. It shall also describe how the requirements review, toolkit enhancement, change management, user acceptance, training, piloting, deployment, and support activities will be undertaken and documented.
It should be noted that the contracted firm must **spend significant on-site presence during key phases.** Support and maintenance will be done remotely online except where need arise for firm to be on site.

Objective 1: Requirements Review

The contracted firm will be required to review the status of the online platform and all existing requirements documents provided. The contracted firm should have sessions with identified staff members where necessary. The review of the available material is supposed to help the contracted firm understand NCTO Toolkit, the NCTO business processes and the desired automation & upgrade expectations. This objective area also is supposed to help identify and inform the requirements documentation. The final requirements documentation to be used in this assignment will be the signed off versions of the requirements specifications developed by the contracted firm and accepted by the client.

Objective 2: Toolkit Enhancement

The final **Business Requirements Document (BRD), the Systems Requirements Specification (SRS)** and other requirement documentations will be the basis from which toolkit enhancement will be done. It is expected that the contracted firm adopt an **adaptive development life cycle approach** that allow accommodation of changes and delivery of enhanced toolkit in modular form. Further, the contracted firm is required to deploy adequate technical resources to ensure that the turnaround time is within the assignment timelines as per the Assignment Plan.

Objective 3: System testing

Testing will be conducted at various phases of the toolkit enhancement to verify that the developed system meets the specified requirements. The contracted firm will be required to conduct unit testing, integration testing, system testing, user acceptance testing (UAT), security testing, and stress testing. User acceptance test will be conducted with users and realistic data.
All critical tests will be signed off on before proceeding to the next phase of the assignment. A log of all tests, emerging issues, and resolution must be maintained

throughout the life of the assignment from the time the first tests are conducted to when the warranty period ends. It should be possible to go back and refer to the test logs whenever a need arises.

Objective 4: Change Management (requirements and training)

The contracted firm is expected to develop a **change management plan** and manage changes at the system level and provide training to staff. Any change to the enhanced toolkit will need an approval process. Each change request will be evaluated, approved, implemented, and reviewed. Review of changes to working products, such as the project implementation plan, requirement specification, software design and testing, will be conducted after implementing the required modification.
It is expected that training materials will be developed and approved in advance (before being used). The materials should include **hard copy documents** (professionally designed and produced/published), **soft copy versions** that are easy to render on computers electronic gadgets such as tablets and phones, **in-built help tools** in the solution, **how to do videos** and **step- by-step infographics** for critical and common processes. The delivery methodology of this training should be a mix of various modern and innovative techniques that will ensure that optimal results are achieved.

Objective 5: Piloting, data migration and deployment

Following successful completion and formal sign-off of User Acceptance Testing (UAT), the contracted firm shall: migrate all approved data (Data migration), deploy the system to the production environment (System Deployment), verify system functionality (System verification), and provide post-deployment support. The data migration process shall ensure the integrity, completeness, and consistency of critical data. The data migration requirements include preserving existing transactions, supporting the Secretariat's reporting and Business Intelligence requirements, and ensuring data traceability.

Objective 6: Documentation

The contracted firm shall prepare, maintain, and submit all project documentation required throughout the assignment in accordance with recognized industry best practices. All documentation shall be clear, complete, and tailored to the intended audience, with the appropriate level of technical detail.
The contracted firm shall ensure that project documentation is updated throughout the implementation lifecycle and that the final versions are submitted in both editable electronic format and printable hard copies where applicable.

Objective 7: Support and maintenance

The contracted firm shall provide **post-implementation support and maintenance services** in accordance with the approved Assignment Plan and the agreed Service Level Agreement (SLA). The submitted bid and the Assignment Plan shall incorporate a draft SLA detailing the following:

Element	Details
Service Scope	Scope of support services
Support Arrangements	Support channels and procedures
Response and Resolution Times	Service level targets
Escalation Procedures	Escalation path for unresolved issues
System Availability Targets	Minimum availability commitment of 99.7%
Maintenance Schedules	Preventive and corrective maintenance schedule
Reporting Requirements	Performance reporting obligations

The support and maintenance services shall include corrective (Bug fixes and defect resolution), preventive (Proactive measures to prevent issues), adaptive (Adjustments for changing environments), and minor enhancement maintenance (Small improvements and optimizations) to ensure the continued stability, security, and optimal performance of the system. The contracted firm shall also provide technical support to users, resolve reported incidents and defects within the agreed SLA timelines, and implement software updates, patches, and security fixes as required.
The minimum support and maintenance period shall be One (1) calendar year, commencing from the date of formal sign-off of the final module following successful go-live.

6. Methodology

6.1. Guiding principles

The assignment will be guided by a participatory, collaborative, and adaptive approach. The contracted firm will work closely with the NCTTCA team through regular consultative meetings, workshops, and feedback sessions to ensure a shared understanding of the project objectives and expectations.
Throughout the assignment, the contracted firm will proactively identify constraints and gaps, document all feedback, and manage changes through a formal process using a Requirements Traceability Matrix. This ensures that NCTTCA inputs are effectively incorporated while maintaining strong governance and quality standards.

6.2. General Approach

Phase	Description
Inception Phase	Develop and obtain approval of the Assignment Plan (Inception Report) as the foundational document detailing work plan, resources, risks, and delivery strategy

Requirements Review	Thoroughly review all existing documentation, the current NCTO Toolkit, and business processes. Engage with the NCTO team to validate requirements, identify gaps, and produce approved BRD and SRS
System Development	Adopt a modular and iterative development approach based on approved requirements. Develop, review, and refine system modules in close consultation with the NCTO team
Testing	Implement a comprehensive testing strategy including unit, integration, system, security, stress, and User Acceptance Testing (UAT). All testing supported by detailed test plans, traceable logs, and formal signoffs
Change Management & Training	Develop and execute a structured Change Management Plan. Design and deliver high-quality training using blended modern methods, including manuals, videos, infographics, and in-app support tools
Piloting, Data Migration & Deployment	Follow a carefully planned pilot phase with user feedback incorporation, followed by secure data migration and phased deployment to ensure minimal disruption to operations and full BI functionality
Documentation	Produce clear, high-quality technical and user documentation throughout the assignment, including a comprehensive User Manual in both hard and soft copies
Support & Maintenance	Provide post-implementation support and maintenance for a minimum of one (1) year as per the signed SLA, with regular performance reporting

This methodology ensures flexibility to accommodate changes while maintaining strong governance, traceability, quality control, and timely delivery. All key deliverables will be submitted progressively and subjected to client review and approval.

7. Deliverables

Based on the scope and methodologies detailed above, the below is a summary of key deliverables of this assignment:

1. **Inception Report (Assignment Plan)** – A comprehensive document detailing our understanding of the assignment, detailed work plan, schedule, resource requirements, and implementation approach. This will serve as the official Inception Report.
2. **Business Requirements Document (BRD)** – Clearly defined and stakeholder-approved business requirements.
3. **System Requirements Specification (SRS)** – Detailed technical and functional specifications for the enhanced NCTO Toolkit.

4. **Requirements Traceability Matrix** – A living tool to track all requirements from initiation to final implementation.
5. **System Prototypes** – Interactive prototypes showcasing the look, feel, and key functionalities of the system.
6. **Fully Tested and Signed-off System Modules** – Modular components of the upgraded toolkit, fully developed, tested, and approved by users.
7. **Source Code and Technical Documentation** – Complete, well-documented source code based on open-source tools, compliant with the client's ICT policies.
8. **Test Plan and Test Reports** – Detailed Test Plan and comprehensive end-to-end Test Report, including signed-off UAT reports for each module.
9. **Training Materials and Reports** – High-quality training packages (manuals, videos, infographics, in-app help) and associated training reports.
10. **Fully Functional System in Production Environment** – Live, validated, and signed-off NCTO Toolkit deployed in production.
11. **Project Acceptance Memorandum** – Formal document signed by both parties certifying successful completion and handover of the project.
12. **Support and Maintenance SLA** – Signed Service Level Agreement covering a minimum of one Year of post-go-live support, including performance reporting and 99.7% availability commitment.

8. QUALIFICATIONS

The firm

The Contracting firm is required to have previously undertaken **at least Two (2) comparable assignments** in terms of **nature** (design and development), **magnitude**, **complexity**. The assignments must have been undertaken in the last 5 years and each should have been completed in a period not more than 1 year from date of commencement to full completion.

The Contracting Firm shall provide **one qualified team** comprising the following minimum key roles to successfully deliver the assignment:

1. Project Manager

- Overall responsibility for the successful delivery of the assignment and serves as the primary contact person for the client throughout the project.
- **Qualification**: Bachelor's Degree in a relevant field.
- **Experience**: Minimum 10 years of general experience, with at least 7 years in Information Systems project management.
- **Specialized Skills**: Information Systems project management.
- **Similar Assignments**: At least 3 similar projects in the last 7 years.

2. Business Analyst / Systems Architect

- Responsible for requirements gathering, interpreting, and translating user needs into functional and technical specifications, and converting user requirements into system design and documentation. Works closely with the development team.

- **Qualification**: Bachelor's degree in business, Computer Science, Information Technology, Information Systems or equivalent.
- **Experience**: Minimum 6 years general experience, with at least 5 years in similar role.
- **Specialized Skills**: Requirements gathering & analysis, system design, and documentation.
- **Similar Assignments**: At least 2 similar projects in the last 5 years.

3. **Data Engineer**
    - Responsible for data warehouse design, ETL/ELT development to automate data processing, and development of data analytics objects for visualization and Business Intelligence.
    - **Qualification**: Bachelor's Degree in a relevant field.
    - **Experience**: Minimum 10 years general experience, with at least 7 years in data engineering or related work.
    - **Specialized Skills**: Data warehouse design, ETL/ELT processes, data pipeline automation, and development of visualization-ready data objects.
    - **Similar Assignments**: At least 3 similar projects in the last 6 years.

4. **Backend Developer**
    - Responsible for programming and implementing the backend solution.
    - **Qualification**: Bachelor's Degree in a relevant field.
    - **Experience**: Minimum 3 years general experience, with at least 2 years in backend development.
    - **Specialized Skills**: Programming in the latest development languages/frameworks.
    - **Similar Assignments**: At least 2 similar projects in the last 3 years.

5. **Front-end / UI/UX Expert**
    - Responsible for designing and implementing the user interface and overall user experience.
    - **Qualification**: Bachelor's Degree in a relevant field.
    - **Experience**: Minimum 4 years general experience, with at least 3 years in front-end development.
    - **Specialized Skills**: User Interface (UI) and User Experience (UX) design.
    - **Similar Assignments**: At least 2 similar projects in the last 3 years.

6. **Mobile Developer**
    - Responsible for developing a mobile application that enables real-time reporting of incidents along the Northern Corridor by drivers and other stakeholders. The application will also support data collection by designated enumerators using dynamic and configurable questionnaires.
    - **Qualification**: Bachelor's Degree in a relevant field.
    - **Experience**: Minimum 5 years general experience, with at least 4 years in mobile application development.

- **Specialized Skills**: Mobile app development (Android and/or iOS), real-time data synchronization, and form-based data collection systems.
- **Similar Assignments**: At least 2 similar mobile application projects in the last 5 years.

7. **QA / Test Engineer**
   - Responsible for designing and executing comprehensive test strategies covering unit, integration, system, security, stress, and User Acceptance Testing (UAT). Ensures quality assurance throughout the development lifecycle, maintains test logs, and supports formal sign-off of all critical tests prior to progression to subsequent project phases.
   - **Qualification**: Bachelor's degree in computer science, Information Technology, Software Engineering or equivalent.
   - **Experience**: Minimum 5 years general experience, with at least 4 years in software quality assurance and testing of web and mobile applications.
   - **Specialized Skills**: Test planning and execution, automated testing frameworks, security testing, performance/stress testing, defect tracking, and UAT facilitation. Familiarity with on-premises deployment environments is an advantage.
   - **Similar Assignments**: At least 2 similar projects involving comprehensive testing of web platforms and mobile applications in the last 5 years.

9. DURATION

The total duration for this assignment is 6 calendar months followed by 1 year support and maintenance contract.

10. REPORTING & COORDINATION

The Contracted firm shall work closely with the Project Implementation Team (PIT) in the day-to-day execution of the assignment. At the institutional level, the firm shall operate under the guidance and supervision of the Directorate of Transport Policy and Planning of the NCTTCA Secretariat and shall maintain close coordination with the Northern Corridor Transport Observatory team to ensure effective implementation, and timely delivery of the project objectives.

11. CONFIDENTIALITY STATEMENT

All data and information received from NCTTCA for this assignment are to be treated confidentially and are only to be used in connection with the execution of these Terms of Reference (TOR). The contents of written materials obtained and used in this assignment may not be disclosed to any third parties without the expressed advance written authorization of the NCTTCA.

12. OWNERSHIP OF DATA AND MATERIALS

Any deliverables under this assignment in any form, including data collection and any communications material developed under this assignment, will be the property of NCTTCA.

Section V: High Level User Requirements

Objective

To enhance the existing Northern Corridor Transport Observatory (NCTO) Online Toolkit into a modern, scalable, integrated, and intelligent Smart Corridor Performance Platform that supports near real-time monitoring, advanced analytics, decision support, and efficient corridor management.

The proposed enhancement seeks to:

1. Improve the usability, and overall user experience of the NCTO Online Toolkit.
2. Enable near real-time monitoring and visualization of performance indicators.
3. Provide advanced business intelligence and analytics capabilities for data-driven decision-making.
4. Enhance data processing and reporting through robust ETL/ELT and API frameworks.
5. Facilitate mobile-enabled field data collection, incident reporting, and monitoring.
6. Establish a scalable and sustainable platform architecture capable of accommodating future corridor performance monitoring needs and emerging technologies.

Overview

The Proposed enhanced toolkit, envisioned as a Smart Corridor Performance Platform, will have the following aspects covered. During the requirements phase of this assignment, the following high-level specifications will be elaborated in detail:

- **Enhanced User Experience and Collaboration:** Deliver an intuitive, responsive, and role-based user interface that enables users to access dashboards, reports, maps, and analytical tools from desktops, tablets, and mobile devices. The platform shall improve collaboration among corridor stakeholders through timely information sharing, automated notifications, and secure access to relevant information.
- **Advanced KPI Monitoring:** Continuous, up-to-date, and near real-time tracking of corridor performance indicators. The system will automatically refresh KPIs as new data becomes available, providing stakeholders with an accurate and current view of corridor performance at any moment.
- **Business Intelligence and On-Demand Analytics**: A powerful BI environment that enables users to perform advanced data mining by running custom queries, explore datasets interactively, generate tailored analytical insights, and produce on-demand custom reports. This capability will support deeper analysis beyond predefined dashboards and empower users to extract the specific information they need.
- **Integrated Modelling Framework:** Provide a flexible framework for integrating multiple analytical, simulation, and reporting models into a common platform. The solution shall accommodate existing models and facilitate the integration of future models without significant redevelopment, allowing users to visualize model outputs and incorporate analytics into operational and strategic decision-making.
- **End-to-End Automation of Data Workflows**: Full automation of the data lifecycle—from acquisition and ingestion (including via APIs that pull data from multiple external sources), through processing, validation, and transformation, to automated report

generation. This will eliminate manual bottlenecks, improve data quality, and ensure timely availability of information.

- **Mobile Application:** A lightweight mobile application designed for real-time incident reporting by stakeholders and drivers, as well as offline-capable data collection. The app will function reliably in areas with limited connectivity, allowing users to capture and submit data even when offline, and will synchronize automatically once connectivity is restored. Its simplified design will make it accessible and easy to use for non-technical field users. The platform shall also provide a corresponding backend (web) console that supports management of users who participate in data collection; creation and management of different questionnaires and surveys; management of all data submitted from the mobile application; and full lifecycle management of real-time reported incidences, including status tracking, assignment, resolution, and generation of incident reports.
- **Enhanced Content Management System (CMS):** Provide an enhanced Content Management System that enables authorized administrators to manage and customize all platform components through an intuitive backend interface. The CMS shall support content publishing, dashboard configuration, report management, interface customization, user and role management, workflow administration, and management of platform features without requiring software development expertise.
- **Data Migration**: Migrate all existing datasets from the current NCTO Online Toolkit to the upgraded Smart Corridor Performance Platform. The migration process shall preserve data integrity, completeness, consistency, and traceability while ensuring continuity of business operations and uninterrupted access to historical information for reporting, analytics, and Business Intelligence.

Minimum functions and features

Web Analytics Interface

A modern, interactive, and user-friendly web analytics dashboard that serves as the primary entry point for users. It enables near real-time and historical performance monitoring, visualization, and in-depth analysis. Key functionalities include:

- Interactive charts and graphs (line, bar, pie, gauges etc.).
- Advanced filtering by country, route section, node, period, and transport mode.
- Drill-down capabilities from summary views to detailed data.
- Customizable personal dashboards that users can create, save, and share.
- Historical trend analysis, period-on-period comparisons, benchmarking etc.
- Weekly dashboard to report on Northern corridor port charter weekly KPIs.
- One-click export to Excel, CSV, PDF, and scheduled report distribution.

Business Intelligence (BI) Module

An advanced analytics module that supports deep data exploration, modelling, and decision support. It supports:

- Ability for users to execute simple to advanced queries to retrieve and present data in user-defined formats.

- Data mining to extract and export data in different formats.
- Comprehensive time-series analytics and historical trend analysis.

Mobile Application (Client)

A modern, intuitive, and responsive mobile application (available on Android and iOS) that supports field data collection, incident reporting, and real-time operational monitoring. Key client-side features include:

- Offline data collection with automatic synchronization.
- Flexible survey and form builder to support different types of field surveys, inspections, and data collection activities.
- Incident reporting allowing users to report corridor incidents, disruptions, delays, accidents, infrastructure issues, and non-tariff barriers in real time.
- Real-time or batch data submission with GPS tagging and photo/video attachments.
- Push notifications and alerts for critical incidents, operational updates, and early-warning information.
- Multi-language support (English, French).
- Role-based access control for different user groups such as survey teams, inspectors, transporters, and administrators.

Mobile Backend & Incident Management Console

A secure web-based backend console that complements the mobile application and enables authorized administrators and corridor managers to fully manage field data collection operations and reported incidences. Key capabilities include:

- Field user management: Create, activate, deactivate, and manage user accounts for enumerators, survey teams, inspectors, transporters, and other stakeholders who participate in data collection; assign roles and permissions.
- Questionnaire and survey management: Design, create, edit, version, publish, and retire different questionnaires and forms (dynamic and configurable) for field surveys, inspections, and other data collection activities; support multiple concurrent questionnaire types.
- Submitted data management: View, filter, validate, clean, approve/reject, export, and archive all data submitted from the mobile application; support data quality checks and linkage to the ETL/ELT pipeline and BI modules.
- Real-time incident management: Receive, view, and manage incidents reported via the mobile application; track status (e.g., Open, Under Investigation, Escalated, Resolved, Closed); assign incidents to responsible officers or units; record actions taken and resolution notes; maintain full audit trail.
- Incident reporting and analytics: Generate on-demand and scheduled reports on reported incidences (by type, location, corridor section, status, response time, frequency, and trends); support export and integration with dashboards, GIS maps, and the Reports Module.

- Notifications and collaboration: Configure automated alerts and notifications to relevant stakeholders when new incidents are reported, or status changes occur; support comments and collaboration on incident records.

CMS (Content Management System)

A simplified, user-friendly, and flexible Content Management System that allows non-technical administrators to easily manage the platform. It supports:

- Easy addition, modification, and removal of performance indicators without requiring developer support.
- Management of website content, publications, metadata, and system configurations.
- Workflow-based approval processes for new indicators or content.
- Version control and audit trail for all changes.
- Template management for dashboards, reports, and surveys.

Reports Module

A dedicated, powerful reporting module for the generation, management, and dissemination of information. It enables:

- Automated generation of weekly, monthly, quarterly, and annual reports.
- Custom report builder with drag-and-drop functionality.
- Template-based standardized reports (e.g., Corridor Performance Report, Annual Observatory Report).
- Scheduled distribution of reports via email or portal notifications.
- Document repository with search, versioning, and access control for publications and technical documents.
- Export in multiple formats (PDF, Excel, Word).
- Ability to monitor site traffic and downloads of reports.

ETL/ELT Pipeline

A robust, automated Extract, Transform, and Load (ETL/ELT) pipeline that forms the backbone of the platform's data processing. It is responsible for:

- Automated ingestion of data from multiple sources (APIs, mobile app, manual uploads).
- Data validation, cleaning, standardization, and enrichment processes.
- Transformation of raw data using business rules and calculations.
- Scheduled and event-triggered execution for near real-time updates.
- Error handling, logging, and alerting for failed processes.
- Ensuring data quality and consistency across the Data Lake and Data Warehouse.

API Management Module

A secure and well-documented API management layer that facilitates seamless integration and data exchange. It provides:

- RESTful APIs for internal and external system integration.

- Secure authentication and authorization (OAuth, API key etc).
- Integration with stakeholders' systems (Customs, RECTS, Weighbridges, etc.).
- Public API endpoints with proper versioning and documentation.
- Rate limiting, monitoring, and analytics on API usage.
- Support for open data initiatives and third-party developer access where appropriate.

API Client and Data Integration Services

The platform shall include a configurable API Client capable of securely connecting to, consuming, and synchronizing data from multiple external data sources and web services. The API Client shall support:

- Connection to RESTful APIs and other standard web service interfaces exposed by stakeholder systems.
- Automated scheduled and event-driven data extraction from multiple endpoints.
- Support for JSON, XML, CSV, and other commonly used data exchange formats.
- Configurable connectors that allow new API endpoints to be added with minimal software development.
- Data transformation, mapping, validation, and normalization before loading into the platform.
- Automated error handling, retry mechanisms, logging, and notification of failed data synchronization processes.
- Incremental and full data synchronization capabilities to minimize bandwidth and processing overhead.
- Monitoring dashboards for API connectivity status, synchronization history, processing statistics, and error reporting.
- Secure storage and management of API credentials, encryption keys, and connection parameters.
- Integration with the platform's ETL and Business Intelligence modules to support automated acquisition, processing, and analysis of data from diverse stakeholder systems.

Section VI: Standard Form of Contract

MODERNIZATION AND REDEVELOPMENT OF THE NORTHERN CORRIDOR TRANSPORT OBSERVATORY TOOLKIT FOR THE NORTHERN CORRIDOR TRANSIT AND TRANSPORT COORDINATION AUTHORITY (NCTTCA)

Lump-sum payments

Date: August 2026

CONTRACT FOR CONSULTING SERVICES – MODERNIZATION AND REDEVELOPMENT OF THE NORTHERN CORRIDOR TRANSPORT OBSERVATORY TOOLKIT FOR THE NORTHERN CORRIDOR TRANSIT AND TRANSPORT COORDINATION AUTHORITY (NCTTCA)

This Agreement, (hereinafter called "the Contract") is entered into this______________________________ by and between **the Northern Corridor Transit and Transport Coordination Authority (NCTTCA)**, whose registered office is situated at *1196 Links Road, Nyali, P.O. Box 34068 – 80118 Mombasa, Kenya (*hereinafter called "the Client") of the one part AND

___________________________ whose registered office is situated at __________________________ (hereinafter called "the Consultant") of the other part.

WHEREAS the Client wishes to have the Consultant perform the services [hereinafter referred to as "the Services"), and

WHEREAS the Consultant is willing to perform the said Services,

NOW THEREFORE THE PARTIES hereby agree as follows:

1. Services

(i) The Consultant shall perform the Services specified in

Appendix A, "Terms of Reference and Scope of Services," which is made an integral part of this Contract;

(ii) The Consultant shall provide the personnel listed in Appendix B, "Consultant's Personnel," to perform the Services;

(iii) The Consultant shall submit to the Client the reports in the form and within the time periods specified in Appendix C, "Consultant's Reporting Obligations."

2. Term

The Consultant shall perform the Services during the period commencing on ______________________ and continuing through to _________________________or any other period(s) as may be subsequently agreed by the parties in writing.

3. Payment

A. Ceiling

For Services rendered pursuant to Appendix A, the Client shall pay the Consultant an amount not to exceed _________________ (United States _________________), exclusive of all local taxes.

This amount has been established based on the understanding that it includes all of the Consultant's costs and profits. The Client is exempted from tax in the host country.

B. Schedule of Payments

The schedule of payments is specified below:

_____________ (being 30% of the Contract sum) upon the Client's receipt of the Inception Report, acceptable to the Client; and

__________________ (being 40% of the Contract sum) upon the Client's receipt of the Interim Report, acceptable to the Client;

____________ (being 30% of the Contract sum) upon the Client's submission of the Final System and Reports, acceptable to the Client.

Total USD ___________________

C. Payment Conditions

Payment shall be made in US Dollars unless otherwise specified not later than thirty [30] days following submission by the Consultant of invoices in duplicate to the Coordinator designated in Clause 4 here below. If the Client has delayed payments beyond thirty (30) days after the due date hereof, simple interest shall be paid to the Consultant for each day of delay at a rate three percentage points above the prevailing Central Bank of Kenya's average rate for base lending.

A report shall be considered accepted/approved by the client if no comments are received from the client within two weeks of submission, and thus due for payment.

4. Project Administration

A. Coordinator

The Client designates _________________ as Client's Coordinator; the Coordinator will be responsible for the coordination of activities under this Contract, for acceptance and approval of the reports and of other deliverables by the Client and for receiving and approving invoices for payment.

B. Reports

The reports listed in Appendix C, "Consultant's Reporting Obligations," shall be submitted in the course of the assignment and will constitute the basis for the payments to be made under paragraph 3.

5. Performance Standards

The Consultant undertakes to perform the Services with the highest standards of professional and ethical competence and integrity. The Consultant shall promptly replace any employees assigned under this Contract that the Client considers unsatisfactory.

6. Confidentiality

The Consultant shall not, during the term of this Contract and within two years after its expiration, disclose any proprietary or confidential information relating to the Services, this Contract or the Client's business or operations without the prior written consent of the Client.

7. Ownership of Material

Any studies, reports or other material, graphic, software or otherwise prepared by the Consultant for the Client under the Contract shall belong to and remain the property of the Client. The Consultant may retain a copy of such documents and software.

8. Consultant not to be Engaged in certain Activities

The Consultant agrees that during the term of this Contract and after its termination the Consultant and any entity affiliated with the Consultant shall be disqualified from providing services (other than the Services and any continuation thereof) resulting from any recommendation arising from this consulting service.

9. Insurance

The Consultant will be responsible for taking out any appropriate insurance coverage.

10. Assignment

The Consultant shall not assign this Contract or sub-contract any portion of it without the Client's prior written consent.

11. Law Governing Contract and Language

The Contract shall be governed by the laws of Kenya and the language of the Contract shall be English Language. The final User Manual, however, must be presented in English and translated into French.

12. Dispute Resolution

Any dispute arising out of the Contract, which cannot be amicably settled, between the parties shall be referred by either party to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed by the chairman of the Chartered Institute of Arbitrators, Kenya branch, on the request of the applying party.

FOR THE CLIENT

Full Name: _________________________

Title: ______________________________

Signature: _________________________

Date: ______________________________

FOR THE CONSULTANT

Full Name: ________________________

Title: _____________________________

Signature: _________________________

Date: _____________________________