REQUEST FOR PROPOSALS

for Proof of Concept (PoC) Program 6:
AI-Based Traffic Monitoring and Traffic Flow Forecasting PoC

The Project for Promoting Artificial Intelligence Ecosystem in the Hashemite Kingdom of Jordan

April 12, 2026

Japan Development Service Co., Ltd. (JDS)

Section 1. Summary Sheet of the Instructions to Applicants

1. Name of the assignment	AI-Based Traffic Monitoring and Traffic Flow Forecasting PoC
2. Method of selection	QCBS (Quality and Cost Based Selection)
3. JDS's officer in charge	Najlaa Salloum (Ms.) c/o JICA Project office, Ministry of Digital Economy and Entrepreneurship Address: Ministry of Digital Economy and Entrepreneurship 8th Circle Bayader Wadi Al Seer Telephone: + 96265805700 Facsimile: + 96265861059 E-mail: ai-jaies@modee.gov.jo
4. Pre-proposal conference	A pre-proposal conference will be held: No
5. Type of contract	Lump-sum
6. Deadline of request for clarification	April 19th, 2026 Send email to kogure@jds21.com for the request of clarification.
7. Proposal submission deadline	**Date: May 10th, 2026** **Time:** 16:00 Jordan Time
8. Proposal submission address	same as the above **3. JDS's officer in charge**
9. Expected date for the negotiations	**Late of May, 2026**
10. Expected date for the commencement of the Services	**Early of June, 2026**

Section 3. Instructions to Applicants

A. General Provisions

1. Introduction

1.1 Applicants are invited to submit a Information of CCD number, financial statements and a Technical Proposal together with a Financial Proposal for the PoC program (hereinafter called the "Proposal"). The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected Applicant.

1.2 Under the provision of the assignment, the Applicant shall preprocess and cleanse provided datasets for MoDEE (The Ministry of Digital Economy and Entrepreneurship) in compliance with Section 6 - Terms of Reference (TOR) (hereinafter referred to as "the System").

1.3 The Applicant is required to apply as a Joint Team of academia AI researcher and a private IT company. The Joint Team should have a single, unified point of contact (focal point) to communicate with stakeholders which represents both private IT company and academic AI researcher as described in Section 6 - Terms of Reference (TOR).

B. Preparation of Proposals

2. General Considerations

2.1 In preparing the Proposal, the Applicant is expected to examine the attached Terms of Reference (ToR) in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.

2.2 The proposal shall be prepared and submitted by filling out the forms and documents provided under Clause 5. Each of the forms shall be completely filled in digitally as files and send back to the Project.

3. Cost of Preparation of Proposal

The Applicant shall bear all costs associated with the preparation and submission of its Proposal, and JDS shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. JDS is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Applicant.

4. Language

The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the Applicant and JDS, shall be written in English.

5. Documents Comprising the Proposal

The Proposal shall comprise the documents and forms listed below;

1st PDF Information of CCD number and financial statements

(1) INFO-1

2nd PDF file protected by a password with the Technical Proposal:

(1) TECH-1
(2) TECH-2
(3) TECH-2a
(4) TECH-3
(5) TECH-4
(6) TECH-5
(7) TECH-6

3rd PDF file protected by a different password) with the Financial Proposal:

(1) FIN-1
(2) FIN-2

6. Description of Joint Team

Applicants are requested to describe the Joint Team to be formed for the implementation of the PoC program using the provided format in Form TECH-2 Description of Joint Team. The description of the academia AI researcher should include affiliation, title, and background of the researcher, etc. The description of the private ICT company should include the company's founding year, similar development achievements, percentage of Jordanian engineers, etc. In addition, Applicants must submit CCD license as well as audited financial statement with Proposal.

7. Proposal Validity

The proposal must remain valid for 30 calendar days after the Proposal submission deadline.

8. Clarification and Amendment of RFP

The Applicants may request a clarification of any part of the RFP no later than seven (7) calendar days after the issuance of RFP. Any request for clarification must be sent by email transmissions to the address **kogure@jds21.com**. JDS will respond in emails, and will send copies of the response (including an explanation of the query but without identifying its source) to all shortlisted Applicants. Should JDS deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below;

(1) At any time before the proposal submission deadline, JDS may amend the RFP by issuing an amendment. The amendment shall be sent to all shortlisted Applicants by email and will be binding on them. The shortlisted Applicants shall acknowledge receipt of all amendments by email.
(2) If the amendment is substantial, JDS may extend the proposal submission deadline to give the shortlisted Applicants reasonable time to take an amendment into account in their Proposals.

9. Technical Proposal Format and Content

9.1 The Technical Proposal shall not include any financial information. A Technical Proposal containing financial details shall be declared non-responsive.

9.2 The Applicant is required to submit a Technical Proposal using the standard forms provided in **Section 4. Technical Proposal Forms**.

10. Financial Proposal

10.1 The Financial Proposal shall be prepared using the standard forms provided in **Section 5. Financial Proposal Forms**. It shall list all costs associated with the assignment, including (a) remuneration, (b) reimbursable expenses indicated in the Financial Proposal Forms.

10.2 The Applicant is responsible for meeting all tax liabilities arising out of the Contract.

10.3 The Applicant shall express the price for its Services in US dollars.

C. Submission, Opening and Evaluation

11. Submission of Proposals and their passwords

11.1 The Applicant shall submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 5 (Documents Comprising the Proposal). A legally valid digital signature (such as digitally signed PDF by Adobe Acrobat) is also acceptable.

11.2 The submitted files must not contain visible traces of modifications (such as strike-through characters or revision histories). Since all the documents and forms must be digital files, they must be clean, final files.

11.3 The signed Proposal shall be sent to the email address: ai-jaies@modee.gov.jo in following three steps:

Step 1. Submission of INFO-1 form in PDF. It is not necessary protect with password.

Step 2. Submission of Technical and Financial Proposal, in separate files in PDF format protected with a different password for each document before the proposal submission deadline described in Section 2. **Do not send passwords for the two PDF files at this moment**. If the applicant sends unprotected PDF files or sends password at this point, **the applicant will be disqualified**.

Step 3. The Applicant shall send a password for the Technical Proposal after the proposal submission deadline described in Section 2 in a separate e-mail. The password shall be sent after 16:00 Jordan time on the same day of the proposal

submission deadline, or within the next day of the proposal submission deadline at the latest.

Step 4. After the evaluation of the Technical Proposal from 10th May to 17th May, JDS will request a password to access the Financial Proposal, only to the Applicant(s) that passed the technical phase.

11.4 In case the size of a submission file (a password-protected PDF file) exceeds 10MB, it shall be sent by using a **secure online storage service** such as Google drive or One drive with appropriate secure access control. The applicant shall send the link to access the file by email.

11.5 The Proposal must be sent to the address and received by JDS no later than the deadline indicated in **Section 2. Summary Sheet of the Instruction to Consultants**, or any extension to this deadline. Any Proposal received by JDS after the deadline shall be declared late and rejected.

12. Confidentiality

From the time the Proposals are opened to the time the Contract is awarded, the Applicant should not contact JDS on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the Applicants who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.

13. Proposals Evaluation

13.1 The evaluators of the Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded.

13.2 The Applicant is not permitted to alter or modify its Proposal in any way after the proposal submission deadline. While evaluating the Proposals, JDS will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.

14. Evaluation of Technical Proposals

14.1 First, Preliminary Evaluation based on the applicant's CCD license and audited financial statement are conducted. Applicants who pass this will undergo a Technical Clarification.

14.2 JDS shall conduct the Technical Clarification for Applicants for any unclear part of the submitted Technical Proposals during the period below. Any questions during the Technical Clarification will be communicated to Applicants by email. Applicants must reply with a response within 2 days of the question being sent.

Technical Clarification Period: **From 10th May to 17th May 2026**

14.3 JDS shall evaluate the Technical Proposals on the basis of their responsiveness to the TOR and the RFP, applying the evaluation criteria, sub-criteria, and point system described below;

[Technical Score (*St*)]

I Applicant's general experience and competence in the field covered by the TOR: **15**

II Adequacy of the proposed approach, methodology and work plan in responding to the TOR: **50**

III Experience and records of the staff members to be assigned to the work: **35**

a) Academic AI researcher: **10**

b) Development engineers: **15**

b) Leader or Project Manager: **5**

c) Team members and its composition: **5**

Total Points for Three Criteria: **100**

14.3 Each responsive Proposal will be given a technical score (St). A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score required to pass: **60**

15. Correction of Errors

Activities and items described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, and no corrections are made to the Financial Proposal.

a. Time-Based Contracts

15.1 If a Time-based Contract form is included in the RFP, JDS will (a) correct any computational or arithmetical errors, and (b) adjust the prices if they fail to reflect all inputs included for the respective activities or items in the Technical Proposal. In case of discrepancy between (i) a partial amount (sub-total) and the total amount, or (ii) between the amount derived by multiplication of unit price with quantity and the total price, or (iii) between words and figures, the former will prevail. In case of discrepancy between the Technical and Financial Proposals in indicating quantities of input, the Technical Proposal prevails and JDS shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity, and correct the total Proposal cost.

b. Lump-Sum Contracts

15.2 If a Lump-sum Contract form is included in the RFP, the Applicant is deemed to have included all prices in the Financial Proposal, so neither arithmetical corrections nor price adjustments shall be made.

16. Taxes

The JDS's evaluation of the Applicant's Financial Proposal shall include all required taxes and duties in Jordan. This PoC has no tax

exemption in Jordan.

17. Combined Quality and Cost Evaluation

17.1 The total score is calculated by weighting the technical and financial scores and adding them as per the formula and instructions stated below.

[Financial Score (*Sf*)]

The lowest evaluated Financial Proposal price (*Fm*) among all Applicants' proposals is given the maximum financial score (*Sf*) of 100.

The formula for determining the financial scores (*Sf*) of all other Applicants' Financial Proposals is as following:

$Sf = 100 \times Fm / F$

where "*Sf*" is the financial score, "*Fm*" is the lowest price, and "*F*" the price of the proposal under consideration.

[Combined Score]

The weights given to the Technical (*Wt*) and Financial (*Wf*) Proposals are:

Wt = **70%** , and

Wf = **30%**

Proposals are ranked according to their combined technical score (*St*) and financial score (*Sf*) using the weights as following:

$S = St \times Wt + \mathrm{Sf} \times Wf$

17.2 There is an absolute ceiling of budget allocated to the PoC Program. Any Applicant with Financial Proposal price that exceeds this ceiling price will be immediately disqualified regardless of its technical score or financial score.

17.3 The Applicant that offers Financial Proposal price within the absolute ceiling price and achieving the highest combined technical and financial score will be invited for negotiations.

D. Negotiations and Award

18. Negotiations

The negotiations will be held shortly after notification to successful/ unsuccessful Applicant(s) with the successful Applicant's representative(s).

[Technical negotiations]

18.1 The negotiations include discussions of the Terms of Reference (TOR), the proposed methodology, JDS's inputs, the Conditions of the Contract, and finalizing the "Description of Services" part of the Contract. These discussions shall not substantially alter the original scope of services under the TOR or the terms of the contract, in order that the quality of the final product, its price, or the relevance of the initial evaluation may not be affected.

[Financial negotiations]

18.2 The financial negotiations will reflect the agreed technical modifications in the cost of the services.

18.3 The financial negotiations will, as necessary, include remuneration rate and quantities of items of reimbursable expenses that may be increased or decreased from the relevant amounts shown in the Financial Proposal but without significant alterations.

19. Conclusion of Negotiations

19.1 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initiated by JDS and the Applicant's authorized representative.

19.2 If the negotiations fail, JDS shall terminate the negotiations informing the Applicant of the reasons for doing so and will invite the next-ranked Applicant to negotiate a Contract.

20. Award of Contract

20.1 After completing the negotiations JDS shall award the Contract to the selected Applicant and promptly notify the other shortlisted Applicants. Technical Proposals of those Applicants who were unsuccessful shall be disposed.

20.2 The Applicant is expected to commence the assignment on the date specified in **Section 2. Summary Sheet of the Instruction to Applicants**.

Section 4: INFO-1 Form

Information of CCD number and financial statements

1. Private IT company name, CCD number and financial statements

Company Name: _____

Previous company names (if any): _____

Company Registration Number (CCD): _____

Date of Incorporation/Registration date: _____

Registered Office Address:

_____

Website URL: _____

Representative phone number: _____

Representative email address: _____

Type of business: _____

Audited financial statements for the last 3 years: (Kindly Attach the Audited financial statements)

_____

_____

_____

_____

_____

_____

_____

_____

_____

Section 5. Technical Proposal Forms

{Notes to Applicant shown in brackets { } throughout Section 4 provide guidance to the Applicant to prepare the Technical Proposal; they should not appear on the Proposals to be submitted. The Page Limit described in the table below must be strictly complied, or it shall lead to low technical score if the number of pages exceeds these limits.}

Checklist of Required Forms

Form	Description	Page Limit
TECH-1	Technical Proposal Submission Form	**1**
TECH-2	Description of Joint Team 1. Academia AI researcher 2. Private IT company 3. Unified contact point (focal point) of the Joint Team	**5**
TECH-2a	Private IT company's organization and experiences including the Database engineer to be assigned in this PoC	**5**
TECH-3	Description of the Approach, Methodology, and Work Plan for Performing the Assignment (describing three target datasets separately)	**15**
TECH-4	Work Schedule and Planning for Deliverables	**3**
TECH-5	Personnel Schedule	**3**
TECH-6	Curriculum Vitae (CV) for Key Engineer and AI Researcher	**10**

Form TECH-1

TECHNICAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: Japan Development Service Co., Ltd. (JDS)

Dear Sirs:

We, the undersigned, offer to provide the services for Proof of Concept (PoC) Program 6: AI-Based Traffic Monitoring and Traffic Flow Forecasting PoC with your Request for Proposals dated April 12, 2026 and our Proposal. We are hereby submitting our Technical Proposal.

We hereby declare that:

(a) All the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification by JDS.

(b) Our Proposal shall be valid and remain binding upon us for the period of time specified in the Instructions to Applicants (ITC).

(c) Our Proposal is binding upon us and subject to any modifications resulting from the Contract negotiations.

We undertake, if our Proposal is accepted and the Contract is signed, to initiate the Services related to the assignment no later than the expected date for the commencement of the Services indicated in the Summary Sheet of the Instruction to Applicants.

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

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

Contact information (phone and e-mail): _____

Form TECH-2

Description of Joint Team

We, {company name} **will applying the PoC program by a Joint Team of academia AI researcher and a private IT company described below.**

1. Academia AI researcher

Name of the researcher: _____

Affiliation: _____

Address of affiliation: _____

Title: _____

Academic background:

_____

_____

Major research papers that are relevant to the PoC program (with names of joint researchers, if any):

{Only the papers that are related to AI or to the technical content of PoC program should be listed. Inclusion of papers in non-relevant research fields may result in low technical score.}

_____

_____

Working experiences with private companies and / or government organizations:

_____

_____

2. Private IT company

Company Name: _____

Previous company names (if any): _____

Company Registration Number: _____

Date of Incorporation/Registration date: _____

Registered Office Address:

_____

Website URL: _____

Representative phone number: _____

Representative email address: _____

Type of business: _____

Management/ Board of Directors:

_____

_____

Address of AI/IT data cleansing team office:

_____

Number of engineers in the team (separate by roles such as database engineer, coder, tester, etc.):

_____

_____

Number of permanent / temporary engineers: _____

3. Unified contact point (focal point) of the Joint Team

Name of the contact person: _____

Affiliation: _____

Title: _____

E-mail address: _____

Telephone: _____

Form TECH-2a

PRIVATE IT COMPANY'S ORGANIZATION AND EXPERIENCE

{Form TECH-2a: a brief description of the Private IT company's organization and an outline of the recent experience of the Private IT company that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the company), and the company's role/involvement.}

A – Private IT company's Organization

{Provide here a brief description of the background and organization of your company, and - in case of a joint venture - of each member for this assignment, including organizational chart, a list of Board of Directors, and beneficial ownership.}

B - Private IT company's Experience

{1. List only previous similar assignments successfully completed in the last *10* years.}
{2. List only those assignments for which the Private IT company was legally contracted by JICA and other similar organizations as a company or was one of the joint venture partners. Assignments completed by Private IT company's individual engineers working privately or through other consulting firms cannot be claimed as the relevant experience of the Private IT company, or that of the Private IT company's partners or sub-consultants, but can be claimed by the engineers themselves in their CVs in FORM TECH-6. The engineer should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by JDS.}

Duration	Assignment name & brief description of main deliverables/outputs	Name of Client & Country of Assignment	Approx. Contract value (in US$ equivalent) / Amount paid to your firm	Role on the Assignment
{e.g., Jan.2009–Apr.2010}	{e.g., "Improvement quality of.....": designed master plan for rationalization of .....; }	{e.g., Ministry of ....., country}	{e.g., US$1 mill/US$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan-May 2008}	{e.g., "Support to sub-national government....." : drafted secondary level regulations on.....}	{e.g., municipality of....., country}	{e.g., US$0.2 mil/US$0.2 mil}	{e.g., sole Consultant}

Form TECH-3

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

{Form TECH-3: a description of the approach, methodology, and work plan for performing the assignment. Separate sections shall be assigned to describe three target datasets in the Terms of Reference (TOR).}

{Suggested structure of Technical Proposal}

a) ***Technical Approach, Methodology, and Organization of the Applicant's team***.
{Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TOR), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s); the degree of detail of such output; and describe the structure and composition of your team. Please do not repeat/copy the TOR in here.}

b) ***Work Plan and Staffing***.
{Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by JDS), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the FORM Tech-4 (Work Schedule).}

c) ***Comments (on the TOR)***
{Your suggestions should be concise and to the point, and incorporated in your Proposal. }

Form TECH-4: WORK SCHEDULE AND PLANNING FOR DELIVERABLES

N°	Activity	Months										
		1	2	3	4	5	6	7	8	9	.....	n

1. List the deliverables with the breakdown for activities required to produce them and other benchmarks such as JDS's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.
2. Duration of activities shall be indicated in a form of a bar chart.
3. Include a legend, if necessary, to help read the chart.

Form TECH-5: PERSONNEL SCHEDULE

N°	Name of Expert / Position	Input of the Personnel (months)													Total person-month input
		1	2	3	4	5	6	7	8	9	10	11	12	n	
AI Reseracher(S)															
1	{name}														
2															
n															
													Sub-Total		
Other Personnel (including Team lead and Database engineer)															
1	{name or category}														
2															
3															
4															
n															
													Sub-Total		

1. For experts the input should be indicated individually; for other personnel it should be indicated individually, or, if appropriate, by category (e.g. programmers, testers, etc.).
2. Months are counted from the start of the assignment.
   ▬ Full time input
   ▨ Part time input

FORM TECH-6

CURRICULUM VITAE (CV) FOR KEY ENGINEER/AI RESEARCHER

Position Title	{e.g., Team Leader/AI Researcher/Database Engineer}
Name of Person:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship / Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

_____

_____

_____

_____

Employment record relevant to the assignment:
{Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact info for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel……/e-mail……; Mr. Hbbbbb, deputy minister]		

Membership in Professional Associations and Publications:

Language Skills (indicate only languages in which you can work):

Person's contact information: (e-mail, phone)

Certification:
I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by JICA.

Name of Engineer /AI Researcher	Signature	Date{day/month/year}

Name of authorized Representative of the Applicant (the same who signs the Proposal)	Signature	Date{day/month/year}

Section 6. Financial Proposal Forms

{*Notes to Applicant* shown in brackets { } provide guidance to the Applicant to prepare the Financial Proposals; they should not appear on the Financial Proposals to be submitted.}

Financial Proposal Forms shall be used for the preparation of the Financial Proposal according to the instructions provided in Section 2 and 3.

FIN-1 Financial Proposal Submission Form

FIN-2 Breakdown of Remuneration, Reimbursable Expenses and Indirect Local Tax Estimates

FORM FIN-1

FINANCIAL PROPOSAL SUBMISSION FORM

{Location, Date}

To: Japan Development Service Co., Ltd. (JDS)

Dear Sirs:

We, the undersigned, offer to provide the services for for Proof of Concept (PoC) Program 6: AI-Based Traffic Monitoring and Traffic Flow Forecasting PoC in accordance with your Request for Proposal dated April 12, 2026 and our Technical Proposal.

Our attached Financial Proposal is for the amount of {indicate the corresponding to the amount(s) currency} {Insert amount(s) in words and figures}, including of all indirect local taxes.

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

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

We remain,

Yours sincerely,

Authorized Signature {In full and initials}: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

Contact information (phone and e-mail): _____

FORM FIN-2

BREAKDOWN OF REMUNERATION, REIMBURSABLE EXPENSES AND INDIRECT LOCAL TAX ESTIMATES

{When used for Lump-sum Contract assignment, information to be provided in this Form shall only be used, if needed, to establish payments to the Applicant for possible additional services requested by the Client. This form shall not be used as a basis for payments under Lump-sum Contracts.}

TOTAL COSTS OF (1), (2) AND (3) : *{insert: total estimate cost}*

Remuneration					
No.	*Name*	*Position*	*Person-month Remuneration Rate (US$ / Month)*	*Time input in person/month (Months)*	*Cost (US$)*
	1) Academic AI Researcher				
1					
2					
	2) Other Personnel				
1					
2					
				Total of (1)	

Reimbursable Items					
	Type of Reimbursable expenses	*Unit*	*Unit Cost*	*Quantity*	*Cost (US$)*
1	{ GPU cloud service }	{ "days" or "months" }	{US$ / day or US$ / month }	{ number of days / months }	
2					
3					
4					
5					
6					
				Total of (2)	

Total Costs of (1)+(2)	

Indirect Local Tax Estimates		
1	GST	

2	Other TAX	
3		
4		
Total Estimate for Indirect Local Tax (3)		

Section 7. Terms of Reference (TOR)

TERMS OF REFERENCE

Joint Team of AI private company (Developer of Solution) and Academic researcher in the field of AI-Based Traffic Monitoring and Traffic Flow Forecasting PoC

Contents

1. Background

Artificial Intelligence (AI) plays a crucial role in fostering comprehensive social and economic development across various sectors. By harnessing the potential of AI technology, we can effectively achieve the objectives of sustainable development and adapt to the challenges of the fourth industrial revolution. Embracing AI enables us to stay abreast of rapid technological advancements and leverage the abundant opportunities it offers to boost economic growth and enhance the performance of governmental entities. AI also creates new job opportunities, contributing to labor market and fosters an environment conducive to innovation and entrepreneurship. Moreover, AI implementation enhances the efficiency, quality, and accessibility of public services while reducing associated costs. These ensure that all segments of society can benefit from improved services and experiences.

The Ministry of Digital Economy and Entrepreneurship (MoDEE) of Jordan has developed and published "AI Strategy and Implementation Plan (2023-2027)" (hereinafter referred to as "the AI Strategy") with the vision of making Jordan a regional leader in the field of AI and providing a unique and attractive technological and entrepreneurial environment for AI to be effective, supportive and an essential component of the national economy.

Under these circumstances, Japan International Cooperation Agency (JICA) has started an international cooperation project with MoDEE titled "The Project for Promoting Artificial Intelligence Ecosystem in the Hashemite Kingdom of Jordan". JICA is dispatching a consultant team to provide technical advice and assistance to the project implementation. The project purpose is to operationalize a **Public-Private-Academia platform** for promoting use of emerging technologies (especially AI) in Jordan. To achieve the project purpose, two major activities are being implemented. One is to establish and improve the capacity of the said platform. Another is to implement PoC (Proof of Concept) programs to promote AI use in real society by means of **Public-Private-Academia consortium**.

The National AI Steering Committee has been established for supervising the implementation of the AI Strategy and Implementation Plan (2023-2027) and takes role to discuss and monitor its progress with selected high-level members from the government (MoDEE), academia, and industry. The JICA project is working closely with the Committee, and the PoC program described in this ToR is selected based on the discussions of the Committee. A Project Secretariat has also been established to help implementation of the project including the PoC program.

This ToR document outlines the requirements for a Joint Team of private IT company and academic AI researcher (hereinafter referred to as "the contractor") to implement a PoC program.

2. Target PoC program

2.1. Title of the PoC program

AI-Based Traffic Monitoring and Traffic Flow Forecasting PoC

2.2. Background of the PoC program

Traffic congestion has become a significant challenge in Amman due to increasing vehicle ownership, urban growth, and limited road expansion capacity. Efficient traffic management is therefore an important priority for improving urban mobility, reducing travel delays, and enhancing road safety.

The Greater Amman Municipality (GAM) currently operates a traffic management system that includes adaptive traffic signal control and traffic monitoring infrastructure such as CCTV cameras and traffic detectors. However, the analysis of traffic conditions and detection of incidents often relies heavily on manual monitoring and conventional traffic engineering approaches. Recent advancements in Artificial Intelligence, particularly in computer vision and data-driven forecasting techniques, provide new opportunities to enhance traffic monitoring and analysis. AI-based systems can process large volumes of traffic data in real time, enabling automated incident detection, traffic pattern analysis, and short-term traffic forecasting.

This PoC program aims to demonstrate the feasibility of applying Artificial Intelligence (AI) technologies to improve traffic monitoring, incident detection, and traffic flow analysis at a selected intersection in Amman. Given the limited implementation period (6 months) and budget constraints, the PoC is intentionally designed to focus on essential functions and avoid connecting to existing systems at GAM for the security.

2.3. Overview of the PoC program

The figure below shows overview of the system to develop in this PoC.

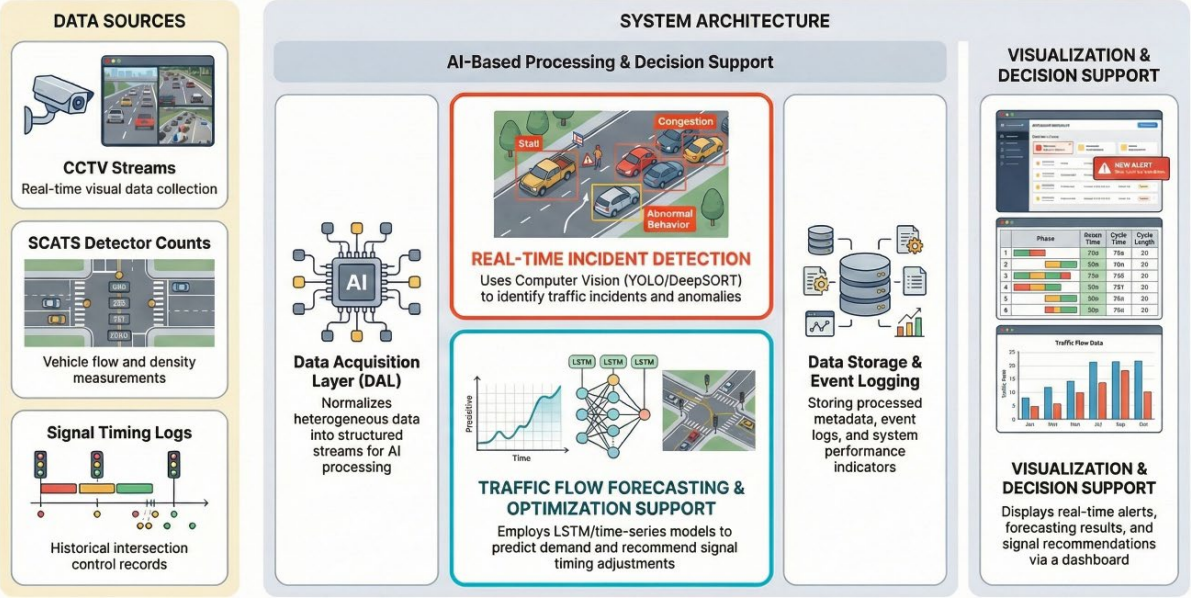

Figure 1: Overview of the system to develop in this PoC

2.4. Disclaimer and Boundary Conditions for This PoC Development

This Proof of Concept (PoC) shall be implemented strictly as a **prototype-level initiative**, not as a full-scale, production-ready system. All parties must acknowledge and adhere to the following boundary conditions and limitations governing the design, development, and delivery of the PoC solution.

2.4.1. Prototype Nature of the System

The PoC system must be regarded as an **experimental prototype** intended solely to demonstrate the feasibility and potential value of AI-based traffic monitoring and traffic flow forecasting in Jordan. It shall **not** be considered a final, fully functional, or operational system suitable for long-term deployment.

2.4.2. Data Availability for the PoC

This PoC system utilizes data that is already available at GAM. Acquiring or generating of new data for the use of PoC is not included in the scope of this PoC.

2.4.3. Strict Scope Limitation

Due to the limited budget and the short implementation period allocated to this PoC, the development scope is intentionally restricted to **only the essential functionalities** specified in this Terms of Reference (ToR). No additional feature requests, enhancements, or extensions shall be accepted beyond the scope explicitly defined herein.

2.4.4. No Integration with Operational Traffic Control System

The PoC system shall operate as a standalone analytical prototype. It shall not be integrated with or connected to the operational traffic signal control system currently used by GAM. The PoC system shall not transmit control commands to traffic signal controllers or any operational traffic management equipment.

2.4.5. Safety of Traffic Operations

The PoC system shall not interfere with the operation of the existing traffic management infrastructure. Any output generated by the PoC system shall be used only for analysis, evaluation, and demonstration purposes.

2.4.6. Non-Extendable Project Period

The PoC must be fully completed within the JICA project period, which ends in 31st December 2026. Under no circumstances can the development schedule be extended beyond this date, and all deliverables must be submitted and accepted prior to the project's closure.

2.4.7. Funding Source and Disbursement

The entire contract amount will be funded 100% by JICA, following JICA's procurement rules and administrative procedures. As this is a donor-funded procurement, no Jordanian party will be involved in budget allocation, tender evaluation, or contract disbursement.

2.4.8. Contracting Arrangement

The development contract for this PoC will be signed between the selected Jordanian IT company and JDS (Japan Development Service Co., Ltd.), which is the consulting firm responsible for implementing the JICA project.

2.4.9. Performance-Based Payment and Risk of PoC Failure

Payment is strictly performance-based. Any portion of the development work that is not completed, or that fails to satisfy the agreed Key Performance Indicators (KPIs) defined in this ToR by the contractual deadline, will not be paid. Such a case will be formally recorded as a "Failed PoC". As is inherent to all PoCs, success is not guaranteed, and experimental outcomes may vary.

2.4.10. Requirement for Cross-Stakeholder Collaboration

To minimize the risk of failure and maximize the likelihood of achieving a meaningful PoC result, all stakeholders—including the contracted IT company, AI researcher(s), GAM, MoDEE, JICA, JDS, and the AI Steering Committee—must actively collaborate. This PoC is designed to demonstrate the value of Government–Industry–Academia partnership, which is a central objective of this JICA project. Flexibility, timely communication, and cooperative engagement are expected from every party.

3. Specifications of the Expected PoC Solution

3.1. Overall Concept of the PoC Solution

The Proof of Concept (PoC) solution shall demonstrate the feasibility and practical value of applying Artificial Intelligence (AI) technologies to support traffic monitoring and operational decision-making at a selected intersection in Amman. The PoC shall be implemented for one representative intersection (Wadi Saqra intersection) and shall utilize existing digital data sources available at the Greater Amman Municipality (GAM), including CCTV video streams, traffic detector counts, and signal control logs generated from the existing traffic management infrastructure.

The PoC system shall demonstrate the integration of two complementary AI functions:

1. **Real-Time Traffic Incident Detection using Computer Vision**
2. **AI-Based Traffic Flow Forecasting and Signal Optimization Support**

The PoC solution shall operate as a standalone analytical prototype and shall not be connected to, or integrated with, the operational traffic signal control system currently used by GAM. The outputs of the PoC system shall be used solely for evaluation and demonstration purposes.

The system architecture shall be designed in a modular manner so that the prototype can serve as a basis for potential future scaling to multiple intersections.

3.2. System Architecture

The PoC solution shall consist of the following functional modules:

3. **Data Acquisition Layer** Responsible for collecting and receiving data from available GAM sources such as CCTV video streams, detector traffic counts, and signal timing logs.
4. **Real-Time Incident Detection Module** Responsible for detecting traffic incidents and abnormal traffic behaviours.
5. **Traffic Flow Forecasting and Signal Optimization Module** Responsible for traffic flow prediction, congestion analysis, and signal optimization recommendation.
6. **Visualization and Decision-Support Dashboard** Responsible for displaying system outputs to GAM operators and analysts.
7. **Data Storage and Event Logging Layer** Responsible for storing processed traffic data, event metadata, forecasting results, and performance indicators.

The architecture shall allow independent development and testing of each module during the PoC phase.

3.3. Data Acquisition Layer

3.3.1. Purpose of the Data Acquisition Layer

The Data Acquisition Layer (DAL) is responsible for securely collecting, ingesting, and normalizing traffic-related data from various data sources of Greater Amman Municipality (GAM) for use in the PoC.

This layer serves as the **entry point of all data used by the PoC system**, ensuring that:

- real-time and historical traffic data are collected reliably
- heterogeneous data formats are normalized

- downstream AI modules receive structured data streams

The DAL **must not interfere with GAM's operational systems** and must operate in **read-only mode**.

3.3.2. Functional Responsibilities

The Data Acquisition Layer shall perform the following core functions:

(1) Data Source Connectivity and Ingestion

Required data for the PoC shall be obtained and ingested using secure methods from GAM data sources, including the followings:

Table 1: Primary data sources of the PoC

Data Source	Description	Usage	Ingestion method
CCTV video streams	Live video feeds from cameras at the Wadi Saqra intersection	AI incident detection	RTSP/HTTP stream
Historical CCTV video	Recorded samples used for model training and calibration	AI model training	Video files
Traffic detector data	Vehicle counts per lane or approach	Traffic forecasting	API / CSV / database export
Signal timing logs	Traffic signal cycle and phase timing records	Signal optimization support	API / CSV / database export

The ingestion layer shall support both:

- real-time streaming pipelines (for CCTV video streams)
- scheduled batch ingestion

(2) Data Normalization

Incoming data may come from heterogeneous systems. The DAL must normalize data into unified formats for downstream modules. Example normalization tasks include:

- timestamp standardization (UTC or local time)
- camera ID mapping
- lane / approach labeling
- detector ID normalization
- unit conversion (counts per minute, etc.)

Normalized outputs must be compatible with:

- AI Processing Layer
- Traffic Analytics Layer
- Data Storage Layer

(3) Data Buffering and Streaming

The DAL must support real-time streaming pipelines for AI modules. Streaming outputs may include:

- decoded video frames
- structured traffic event streams (if the data source is a real-time feed)
- aggregated traffic count streams (if the data source is a real-time feed)

(4) Data Validation

Before forwarding data to downstream modules, the DAL must validate data integrity such as:

- timestamp consistency
- missing frames or packets
- detector data anomalies
- corrupted files

Invalid data should be:

- logged

- flagged
- optionally discarded

3.3.3. Data Sources and Formats

(1) Video Data

- Source: CCTV cameras at Wadi Saqra intersection
- Number of cameras: 1
- Protocol: RTSP
- Video data format: H.264 / H.265 encoded streams
- Video frame: 1920 x 1080 RGB
- Ingesting frame rate: 5-15 FPS for AI processing

(2) Traffic Detector Data

- Source: GAM traffic detectors
- Current system used for traffic control: SCATS (Sydney Coordinated Adaptive Traffic System)[1] – so available data for this PoC is basically exported data or log from the system.
- Data format: Text log file containing aggregated vehicles count of every 15 minutes (available 24 hours) in the following format (Note that the data below is dummy):

```
Thursday, 01 January 2026

Approach  1, Detector:  1
         00:   01:   02:   03:   04:   05:   06:   07:   08:   09:   10:   11:
  :17     32    33    23    15    10    14    10    25    27    22    27    45
  :30     25    23    26    14    23     8    12    14    16    32    25    29
  :45     39    23    33    14    11    11     9    24    10    20    23    26
  :60     26    28    15    13    19     3     9    22    21    28    37    26
Hourly
Total    124   108    99    58    70    36    40    85    74   102   112   126

AM Total:     1034   AM peak     137 10:45 - 11:45

         12:   13:   14:   15:   16:   17:   18:   19:   20:   21:   22:   23:
  :15     23    25    22    41    32    29    35    34    39    37    30    32
  :30     33    37    42    37    36    35    27    30    38    40    26    28
  :45     35    51    29    34    29    35    57    35    30    33    35    25
  :60     43    32    32    34    28    36    31    36    35    33    24    27
Hourly
Total    134   145   125   146   125   135   150   135   142   143   115   112

PM Total:     1607   PM peak     156 12:45 - 13:45

Daily Total   2641
```

Where horizontal axis indicates hour and vertical axis indicates minutes (every 15 minutes).

- Number of detectors at Wadi Saqra intersection: 22 (for all approaching lanes to the intersection)
  - 5 lanes x 4 approaches + 2 extra

(3) Signal Timing Log

- Source: SCATS
- Data format: Text log file like shown below (Note that the data below is dummy).

```
2026-01-01 08:15:03  INT 806  PHASE 2  GREEN ON
2026-01-01 08:15:28  INT 806  PHASE 2  YELLOW ON
2026-01-01 08:15:31  INT 806  PHASE 2  RED ON
2026-01-01 08:15:32  INT 806  PHASE 4  GREEN ON
```

Each line of log contains timestamp, intersection ID, phase number (predefined set of traffic

[1] https://www.scats.nsw.gov.au/

directions to allow such as “northbound & southbound through”, “northbound left turn”, etc.), and signal light status.

3.3.4. Security Requirements

The Data Acquisition Layer must comply with PoC security constraints.

(1) Secure Access

Access to CCTV streams must occur through:

- **Private network at GAM**
- secure credentials and / or encrypted transport where possible

(2) Read-Only Data Access

The DAL must:

- not modify GAM data
- not write to operational systems
- not interfere with traffic signal control

These restrictions are explicitly defined in the PoC scope.

3.3.5. Reliability and Fault Handling

The DAL must include mechanisms for:

(1) Automatic Reconnection

If a CCTV stream fails, retry connection in interval: 5–10 seconds

(2) Data Loss Handling

If detector data is missing or bad:

- flag missing interval
- interpolate if necessary
- log error

(3) Monitoring

The PoC system should indicate following system health metrics on dashboard:

- ingestion rate
- dropped frames
- stream uptime

3.3.6. Performance Requirements

PoC scale: 1 intersection with 1 camera and 22 traffic detectors.
Video stream: 2~10 Mbps, 5~10 fps for AI input.
This is achievable on a single workstation-class PC.

3.3.7. Recommended Technology Stack

The following technologies are recommended for implementation.

Table 2: Recommended Technology Stack

Component	Technology
Video ingestion	FFmpeg / GStreamer
Stream decoding	OpenCV
Data ingestion services	Python
Message queue	Kafka / RabbitMQ
API integration	REST / gRPC
Scheduling	Airflow / Cron
Monitoring	Prometheus

3.4. Real-Time Incident Detection Module

3.4.1. Functional Objective

The system shall automatically detect traffic incidents and abnormal traffic behavior using computer vision techniques applied to CCTV video feeds. The objective is to demonstrate how AI-based video analytics can support faster identification of traffic disruptions and congestion.

3.4.2. Input Data

The module shall utilize the following data sources:

- Live CCTV video streams from the target intersection (RTSP or HTTP stream)
- Historical CCTV video samples for calibration and AI model tuning
- Intersection metadata including:
    - camera location and field of view
    - lane configurations
    - stop line positions
    - monitoring zones for queue spillback detection

Optional supporting data may include operator incident logs for validation purposes.
For model calibration and evaluation, approximately **2 weeks of representative video samples** and **10 hours of selected clips** (actual incident scene) may be required to tune the detection logic and thresholds.

3.4.3. AI Processing Approach

The video analytics pipeline shall include:

(1) Vehicle Detection
Deep-learning object detection models (e.g., YOLO-family models) shall be used to detect vehicles such as cars, buses, trucks, and motorcycles in video frames.

(2) Vehicle Tracking
Multi-object tracking algorithms (such as DeepSORT or ByteTrack) shall track vehicle movements across video frames.

(3) Behavior Analysis
Vehicle movement patterns shall be analyzed to detect abnormal traffic behavior, including:

- stalled vehicles
- abnormal stopping
- unexpected vehicle trajectories
- queue spillback beyond designated zones
- sudden congestion buildup

(4) Event Detection
Detected anomalies shall be classified into event categories such as:

- possible traffic incident
- congestion event
- abnormal traffic condition

3.4.4. Output

The incident detection module shall generate event notifications containing:

- timestamp
- event type
- location within the intersection
- confidence score
- snapshot image or short video clip
- estimated queue length or congestion indicator (if possible)

For efficiency, the system shall primarily store event metadata, while short video clips may be stored only around detected events for verification purposes.

3.5. Traffic Flow Forecasting and Signal Optimization Module

3.5.1. Functional Objective

This module shall demonstrate the use of AI-based forecasting techniques to predict short-term traffic demand and generate recommended signal timing adjustments. The system shall provide decision-support outputs rather than direct control of traffic signals.

3.5.2. Input Data

The forecasting module shall use the following data sources:

- historical traffic counts per approach or detector
- aggregated traffic volume data (15-minute resolution)
- signal phase change logs
- calendar information such as weekday/holiday indicators

Minimum required historical data for model training is approximately **2 weeks of traffic data**, while **3 months of data is recommended** when available.

3.5.3. Forecasting Model

The forecasting system may utilize time-series machine learning models such as:

- Long Short-Term Memory (LSTM) networks
- Temporal neural networks
- Gradient boosting regression models
- Other suitable time-series forecasting algorithms

The model shall generate predictions for short-term traffic demand, typically for **15 minutes / 30 minutes / 1 hour ahead**, with optional extension to longer horizons if feasible.

3.5.4. Signal Timing Recommendation

Based on predicted traffic demand, the system shall generate signal timing adjustment recommendations, such as:

- extension of green time for high-demand approaches
- reduction of green time during low-demand periods
- adjustments to cycle length
- identification of anticipated congestion periods

These recommendations shall be displayed for evaluation only and shall not be transmitted to the operational traffic control system.

3.6. Visualization and Decision-Support Dashboard

The PoC system shall include a web-based dashboard allowing traffic operators and analysts to monitor outputs. Dashboard features may include:

- real-time video monitoring with AI detection overlays (vehicles)
- incident alerts and event logs
- visualization of traffic flow patterns
- short-term traffic forecasts
- signal timing recommendations
- historical performance analysis

The interface shall be accessible through standard web browsers. The figure below shows an example of possible dashboard design.

3.7. Technical Standards and Software Environment

The PoC system should employ widely used and stable open technical standards where possible.

Recommended technologies may include:

- **Programming languages:** Python, JavaScript, or equivalent
- **AI frameworks:** PyTorch, TensorFlow, or equivalent
- **Computer vision libraries:** OpenCV or equivalent
- **Data processing tools:** Python data libraries (e.g., Pandas, NumPy)

- **Database systems:** PostgreSQL, MySQL, or equivalent
- **Web dashboard frameworks:** React, Vue.js, or equivalent
- **Video streaming protocols:** RTSP or HTTP streaming

The solution should prioritize open-source / freely available technologies so that there will be no cost requirements for subscription and updates after the PoC period.

3.8. Hardware and Computing Requirements

Considering the limited budget of the PoC program, the system architecture shall be designed to minimize the need for expensive hardware infrastructure.

3.8.1. AI Model Training

Training of AI models may be conducted using cloud-based AI computing resources, which may include:

- commercial AI cloud services
- cloud GPU instances for model training

The cloud service must be secure and private service so that no training data will be leaked.
Cloud-based training allows efficient model development without requiring high-end local hardware.

3.8.2. Local Inference Hardware

For real-time processing using the trained AI models, the system may utilize:

- a standard workstation class PC
- CPU-based processing where feasible
- optionally a **mid-range consumer-level GPU (e.g., gaming-class GPU)** if required for video inference

High-end professional GPU infrastructure is not required for this PoC.

3.9. Cybersecurity and Data Protection

The PoC system shall follow GAM's cybersecurity and data protection principles to ensure the secure handling of traffic data. Key considerations include:

(1) Network Security

- secure access to CCTV streams and GAM data sources
- use of secure communication protocols where applicable
- restriction of system access to authorized users only

(2) Data Protection

- storage of processed metadata as output rather than long-term raw video
- controlled access to stored data and logs

(3) System Isolation

The PoC system shall remain isolated from the operational traffic signal control system to avoid any impact on real-world traffic operations.

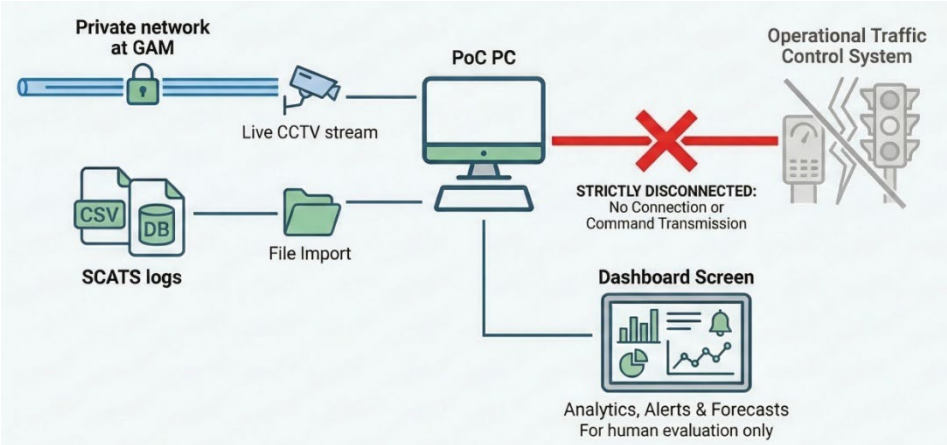

Figure 2: Isolation of PoC system from GAM's existing systems

(4) Access Control

The dashboard and system administration functions shall include authentication mechanisms to restrict access to authorized personnel.

3.10. Performance Evaluation

The PoC shall include mechanisms to evaluate system performance and demonstrate the potential benefits of AI-based traffic management.

Evaluation indicators may include:

- accuracy of incident detection
- detection latency compared with manual monitoring
- accuracy of traffic flow forecasting
- usefulness of signal timing recommendations
- observed changes in congestion indicators during the trial period

Performance shall be assessed using baseline data and trial results during the PoC implementation period.
Note: Since the evaluation score heavily depends on the availability and quality of data (especially for video frames quality), no target accuracy is defined in this ToR, but the stakeholders should thoroughly evaluate the overall scores by comparing with existing non-AI systems.

4. Implementation body of the PoC program (Important)

This PoC program shall be implemented by a Public-Private-Academia consortium consisting of members from the target government organization (beneficiary of the PoC, and provider of data to be used in the AI system), private IT company (developer of the PoC solution), and academic AI researcher (the technical advisor in the field of the latest AI technology). The reason for formulating the three-parties consortium is to demonstrate the importance of collaboration among government, industry and academia for accelerating the development of local AI industry which contributes to solving socio-economic problems in Jordan. The focus of JICA project is to try to develop and enhance the capacity of local AI industry and academia instead of relying on foreign companies so that it would also contribute to generating local employment in the field of advanced technologies like AI. There is another reason to employ three-parties collaboration in this PoC that such collaboration has been proved to be very successful in Japan.

In this PoC program, the target government organization is GAM as primary stakeholder. A representative person will be appointed from the GAM for this PoC and this person will be a member of the consortium. Private IT company and Academic AI researcher will be selected by a tender process as a Joint Team based on this ToR. This means that the applying party must not be an IT company alone or researcher alone, but must be a Joint Team of both. All tender processes will be implemented by the Project Secretariat together with JICA consultant team.

The expected roles of the three parties are summarized in the table below.

Table 3: Expected roles of PoC consortium members

<table>
<tr><th>Roles</th><th>Government Organization</th><th>Private IT company</th><th>Academic AI researcher</th></tr>
<tr><td>Basic role</td><td>Beneficiary of solution, Provider of data</td><td>Developer of AI solution</td><td>Research and Advisor on the AI method to apply in PoC</td></tr>
<tr><td rowspan="2">Reporting</td><td rowspan="2">• Communicate with both private IT company and academic AI researcher</td><td>• Communicate with both government organization and academic AI researcher.</td><td>• Communicate with both government organization and private IT company</td></tr>
<tr><td colspan="2">• Must have a unified contact point for reporting to and communicating with stakeholders (see chapter 4.1 below)</td></tr>
<tr><td>Designing</td><td>• Provide input as the initiator of problem to be solved.
• Assess availability of data to be used in the solution.
• Provide sample data for</td><td colspan="2">• Collaborate as a team to do the followings.
• Interview government organization for requirements
• Design prototype PoC solution based on the result of interview as well as information on available data
• Validate the system design and its required data</td></tr>
</table>

Roles	Government Organization	Private IT company	Academic AI researcher
	designing the solution.		
Implementation	• Provide full data that is necessary to build / train AI model.	• Collaborate as a team to do the followings. • Develop a prototype working solution for the PoC	
Testing	• Evaluate the result of testing and provide advice from the standpoint of data owner	• Perform testing of the PoC solution and solve issues found in the testing	• Verify and validate the test result and provide technical advice on the improvement of AI model from the standpoint of advanced AI researcher

4.1. Unified Contact Point of the Joint Team (Focal point)

The Joint Team must have a single, unified point of contact (focal point) to report to and communicate with stakeholders (MoDEE, AI Steering Committee, JICA consultant team, target government organization) which represents both private IT company and academic AI researcher. Any coordination among the consortium members must be done internally within the consortium, and each member must not communicate independently or directly with the stakeholders. Stakeholders will not provide any coordination within the consortium, but it would be possible for the unified point of contact (focal point) to consult such matters with stakeholders.

4.2. Requirements for private IT company

a. Must be an officially registered company in Jordan (CCD) or registered to other countries with relevant licensing segmentation to provide technology services. A valid licensing permit must be submitted with the proposal.
b. The development team for this PoC must include members who are Jordanian nationals or permanent residents in Jordan.
c. Experience in development of systems that employ machine learning technologies and other AI-related technologies.
d. Minimum one (1) year in system development business.
e. Experience in the following fields is a plus. The company should describe these experiences in the proposal.
   - Computer vision and video analytics
   - Time-series data analysis using AI
   - Data engineering and data pipelines
   - Development of real-time or near real-time systems
   - Traffic data analysis or Intelligent Transportation Systems (ITS) especially for SCATS
f. Must be able to work with stakeholders from public sectors and academia.
g. Must be able to work within GAM's office for private network environment
h. Must be able to form and work as a qualified team of IT engineers and academic AI researcher(s).
i. Must perform roles described in Table 1 at the column of "Private IT company".
j. Must have audited financial statement for the last one (1) year.
k. Must commit to the ethics of artificial intelligence (Jordan AI code of Ethics)

4.3. Requirements for academic AI researcher

a. Must be a researcher or a professor at a university or a research institute in Jordan in the field of AI.
b. Minimum five (5) years' experience as a researcher with three (3) years in the field of academic research of AI technology.
c. Experiences and expert knowledge in the following research field is a plus. The researcher should describe these experiences in the proposal.
   (1) Time-series forecasting and predictive modeling
   (2) Deep learning methods (e.g., LSTM, CNN)
   (3) Computer vision

(4) Machine learning for urban analytics or transportation systems
(5) Applied AI research using real-world datasets

d. Must be able to work with stakeholders from public sectors and IT industry.
e. Must be able to form and work as a qualified team with IT engineers of private company.
f. Must perform roles described in Table 1 at the column of "Academic AI researcher".
g. Must commit to the ethics of artificial intelligence (Jordan AI code of Ethics)

4.4. Tasks of the Joint Team

The Joint Team should perform following tasks:

a. Review on MoDEE's AI Strategy and Implementation Plan (2023-2027) and the Work Plan of JICA project (provided separately) to gain understanding of the background of the PoC program.
b. Hold a kick-off meeting of the PoC consortium consisting of the Joint Team and representatives from target government organization (beneficiary of the PoC program) to discuss and confirm the content and schedule of the development of PoC solution.
c. Participate in meetings related to the implementation of the PoC program with sub-committee of the AI Steering Committee as well as JICA project team members.
d. Perform tasks of developing prototype system described in 3 & 4.
e. Report the progress of PoC program to AI Steering Committee on regular basis (bi-weekly).
f. Submit all deliverables mentioned in 5.
g. At the end of the work, write a fully comprehensive completion report and submit the report to the AI Steering Committee.

5. Deliverables

The Joint Team should submit the following deliverables:

a. Completed PoC system consisting of all subsystems described in 3.
b. All system design and testing documents including, but not limited to, the followings.
   - System architecture including all subsystems and their relationships
   - List of open-source components used in the system
   - Design and table structure of geospatial database
   - Reproducible analytics scripts and documentation of methods, formulas, and limitations
   - Test cases and validation results
c. Set of user manuals of the system
d. At least one training session must be provided to GAM. The training must include:
   - How to use the system
   - How to perform AI-based analysis
   - How to understand outputs from the system
   - How to troubleshoot basic issues
e. Bi-weekly progress reports. During the test-run / evaluation period, the reports should contain the current performance of the PoC.
f. Fully comprehensive completion report that includes the followings.
   - Summary of development activities with schedule
   - Summary of joint evaluation result with all stakeholders
   - Lessons learned and recommendations for areas to improve for possible full-scoped project in future.

6. Duration and Timeline

The duration of this PoC program is six (6) months from the beginning of assignment. The expected timeline of PoC program is shown in the table below.

Table 4: Expected timeline of the PoC program

Activity	Month					
	1	2	3	4	5	6
0. Data preparation by GAM (before starting PoC development)						
1. Project Kick-off & Planning (2 weeks)						
2. System design and data preparation (4 weeks)						
3. AI model development and prototype implementation (8 weeks)						
4. System testing and validation (4 weeks)						
5. Final evaluation and knowledge transfer (4 weeks)						

Note: Necessary raw data for the PoC should be prepared and ready before starting the PoC development by the contractor.
Note: When the applicant makes quotation, the cost of remuneration for required human resources must be appropriately calculated by clearly and accurately estimate their efforts.

7. Confidentiality and Intellectual Property

a. Joint Team should respect the confidentiality of shared information and should agree on the handling of intellectual property rights as outlined in a separate agreement.
b. Intellectual Property of the developed PoC solution should belong to the Joint Team. The beneficiary (GAM) should have the right to use the PoC solution for unlimited time.

8. Budget and Important Contract Conditions

a. Budget for the PoC program will be allocated, managed, and disbursed by JICA according to the JICA's procurement rule.
b. The contract of this PoC program will be a sub-contract of JICA through JICA consultant team of Japan Development Service Co., Ltd.
c. There will be no Jordanian government involving in the contract.
d. The law that governs the contract will be the law of Japan.
e. There will be no advance payment.

9. Gender consideration

JICA has a global agenda and strategy for Gender Equality and Women's Empowerment. In this context, JICA plans to give additional appreciation to the female participants in the PoC when evaluating the proposal in tender process.