



SYAMA PRASAD MOOKERJEE
PORT, KOLKATA
HALDIA DOCK COMPLEX
AN ISO-9001: 2015 ORGANISATION
Office of General Manager
(Engineering)
Jawahar Tower Complex,
P.O.Haldia Township, Dist. Purba
Medinipur, West Bengal, Pin: 721 607



No. SDM(P&E)/927/ENQ/04/2024-25

Dated 12.06.2024

'REQUEST FOR SUBMISSION OF BUDGETARY OFFER'

Subject: Enquiry for obtaining budgetary quotation for “Artificial Intelligence Based video analytics solution for monitoring of safety & security inside dock premises of Haldia Dock Complex, SMPK for 3 (three) years of operation and tech-end support with defect liability obligation & Comprehensive Maintenance”.

Haldia Dock Complex (HDC), Syama Prasad Mookerjee Port Kolkata (SMPK) [erstwhile Kolkata Port Trust] intends to obtain budgetary quotation for “Artificial Intelligence Based video analytics solution for monitoring of safety & security inside dock premises of Haldia Dock Complex, SMPK for 3 (three) years of operation and tech-end support with defect liability obligation & Comprehensive Maintenance”.

The Technical Specification & Scope of Work (**Annexure-I**), Special Conditions of contract (**Annexure-II**), Bill of Quantities (**Annexure-III**) & suggestions to HDC (**Annexure-IV**) for the subject project work, are enclosed herewith for ready reference please.

Budgetary offers in physical form have to be submitted (as per the enclosed Bill of Quantities/Price schedule), along with comments/ suggestions (if any), are invited from experienced / reputed firms, for the subject work, within 03.07.2024.

Encl: As stated

Enquiry for obtaining budgetary quotation for “Artificial Intelligence Based video analytics solution for monitoring of safety & security inside dock premises of Haldia Dock Complex, SMPK for 3 (three) years of operation and tech-end support with defect liability obligation & Comprehensive Maintenance

Division	P&E
Enquiry no.	SDM(P&E)/927/ENQ/04/2024-25 Dt 12.06.2024
Description	Enquiry for obtaining budgetary quotation for “Artificial Intelligence Based video analytics solution for monitoring of safety & security inside dock premises of Haldia Dock Complex, SMPK for 3 (five) years of operation and tech-end support with defect liability obligation & Comprehensive Maintenance.”
Submission date & time	03.07.2024 up to 14.00 hours
Opening Date & time	03.07.2024 up to 14.30 hours
Remarks, if any	To be submitted to
Contact Person	Sri N. Banerjee Assistant Manager (P&E) Mobile no. : + 91 7478007300 e- mail : nbanerjee.hdc@kolkataporttrust.gov.in

Assistant Manager (P&E)
Haldia Dock Complex
Syama Prasad Mukherjee Port, Kolkata

Enquiry for obtaining budgetary quotation for “Artificial Intelligence Based video analytics solution for monitoring of safety & security inside dock premises of Haldia Dock Complex, SMPK for 3 (three) years of operation and tech-end support with defect liability obligation & Comprehensive Maintenance

PROJECT DESCRIPTION & SCOPE OF WORK**No. SDM(P&E)/927/ENQ/04/2024-25****Dated:12.06.2024****A. PROJECT DESCRIPTION**

- i. Haldia Dock Complex, SMPK invites budgetary offers from agencies who are experts in real time Artificial Intelligence based video analytics solution for monitoring of safety & security as per statutory provisions such as DGFASLI, ISPS, applicable OISD standards, international codes and practices.
- ii. Haldia Dock Complex (HDC) comprises of multiple berths along with back area, each designed for continuous productions and storage with very few intermittent stops. Each berth and its back up consists of various mechanical equipment such as mobile harbour cranes, dumpers, payloaders etc. The operational activities for each equipment's are decided by various stake holders operating in the dock premises. It is therefore quite difficult to monitor various steps in the operations and the multiple stakeholders involved in the process.
- iii. Haldia Dock Complex has an existing surveillance system comprising of 102 numbers of IP fixed cameras, IP PTZ (Pan-Tilt-Zoom) dome cameras, and other associated accessories installed at various locations within the premises.
- iv. HDC envisages to engage a suitable firm for providing AI based unified solution for automating management of workplace operations, inspections, safety and security. The contractor will ingest data from sources of data as IP fixed cameras, IP PTZ (Pan-Tilt-Zoom) dome cameras, to analyse and extract actionable insights on HSSE, assets, employee well-being, work packages, and productivity.

B. SCOPE OF WORK

- i. The AI based unified solution should be capable to record all critical and non-critical observations in the premises of HDC and categories it as per internationally accepted standards such as OSHA, IOGP577, COHS, DGFASLI and other similar guidelines.
- ii. Further, it should also provide recommended actions along with risk score to prioritize interventions and analytics regarding categories or location(zones), experiencing most growth, most frequently reviewed observations, high risk rated observations, etc.
- iii. AI based unified solution by bidder must have been deployed in cloud (in MEITY empanelled data centre for projects in India) or in vendor's data centre which is ISO 27001 compliant. The certificate should be valid as on bid due date.

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C. **DASHBOARD & MIS REPORTING:**

A portal with minimum 50 licenses is to be provided by the vendor for accessing the dash board and MIS reporting. The portal is intended to be a single point of reference for all role holders to input, read data and view reports. The portal should be appropriately sectioned into various Units and each Unit having access to all the modules mentioned in functional requirements. The AI based solution must have the following reporting capabilities. The system shall provide a display of video images via the web-based application. The centralized webpage-based system is designed to meet the following minimum requirements:

- a. All pages shall fit within the standard browser screen (Minimum requirement of (1024x768)).
- b. Pages shall be optimized and viewable on all major web browsers. The system shall be accessed through a desktop PC or equivalents.

D. **ANALYTICS**

- i. Dashboard with Notification and alert system over the mail.
- ii. Description of observation captured with unique identification number for every observation captured.
- iii. Highlighting the observation in the image and a minimum 10 second video for proof.
- iv. Risk rating attached to every observation.
- v. Analytical page and the dashboard with overall view of the site with respect to safety.
- vi. Identification of zones with respect to number of violations and overall risk rating of the zone.

The following is a non-exhaustive list of identified hazards that the AI-based video analytics solution should be capable of detecting and monitoring.

SI No	AI Model	DELIVERABLES
1.	PPE COMPLAINCE	Helmets, safety shoes, gloves & goggles
2.	Work at Height	Violations in full body harness usage. Violations in erection of standard scaffolding. Monitoring of scaffolding tags. Monitoring any loose nuts, bolts, tools, clamps or scaffolding materials stored over scaffolding platform. Improper handling of materials in scaffolding. Checking of access and egress. Checking of safe working platform with handrails and toe guards. Checking the presence of a hole watcher in front of manways for confined space entries.

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SI No	AI Model	DELIVERABLES
		Detection of walking over pipelines. Detection sleeping inside plant area
3.	Housekeeping	Debris removal monitoring - from work area and deposited in the identified location Monitoring of workplace hygiene - food wastes and bio wastes in designated bins, removal etc. Waste generation monitoring – debris in the work area.
4.	Hazard Communication	Welding/grinding booths covered on all sides. Covering of OWS pits in the vicinity of hot work areas. Presence of fire extinguishers near the work area. Presence of running water hose near the work area Usage of Job specific PPEs by the workers. Person in line of Dropped objects, swinging loads, Heavy equipment movement, and Hoisted loads that swing and SIMOPS risks.
5.	Hoisting and lifting	Barricading the area where the crane is operating. Identification of trespassing People under load Movement without flagman Parking in unbarricaded area.
6.	Confined Space	Watchman/attendant at entry/egress point Labelling, signage and barricading all potential entry points.
7.	Dropped Object	Unsecured tools or materials left at height holes in grating, Missing Toe boards, missing barriers at height.
8.	Vehicle Safety	Missing potters/banksmen/flagmen/signallers for blind spots. Missing Reflective vests and high visibility apparel to be used by people exposed to operating vehicles/vehicle routes. Separation distance between spotters and vehicles and equipment as indicated by blind spots. Spotter not to be in the line of fire. Reversing vehicles without watchman Unauthorised parking.
9.	Productivity Monitoring	Acquire the total count of people in a control area and reported in form of trend lines and count.
10	Security Module	Automated detection for third party intrusion & fence breach, Web based streaming for remote locations

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- The bidder must offer flexibility in their AI-based solution to allow for re-programming and adaptation based on the specific experiences and requirements of Haldia Dock Complex. The AI system should be capable of learning and improving its performance over time, leveraging the insights gained from the operational environment at Haldia Dock Complex.
- The bidder should detail their approach to ensuring the AI system remains flexible and adaptable to the evolving needs of the client, including the process for incorporating new hazards or refining the detection algorithms based on user feedback and real-world performance inside HDC premise.

E. CLOUD INFRASTRUCTURE

The AI based software solution supplied by bidder must have been deployed in cloud (in MEITY empanelled data centre for projects in India) or in vendor's data centre which is ISO 27001 compliant. The certificate should be valid as on bid due date.

F. NETWORKING & SECURITY

The AI Solution should have complete end-to-end data encryption across web applications. Any certification/ installations required with other related activities shall be installed by the contractor.

G. MAINTAINABILITY REQUIREMENTS

Software upgrades, updates, software enhancements to be implemented at no extra cost. Support functions are responsible for ticket resolution and technical assistance/discussion wherever required for issues reported by end users/departments for end issues related to the web portal. Any update requiring system downtime shall be shared for approval. Once approved, the downtime will be carried out in that period. In case of failure the system shall revert to the same state without any defects.

The following shall be configured as per requirement during the Contract period.

- User Interface
- Workflows /Reporting hierarchy

H. The AI solution is to be deployed over existing cameras, the visual data from the relaying server will be provided to the cloud analytics server, hosting the analytics application. The detailed requirements of the network infrastructure including its components shall be discussed based on the configuration of network existing at site.

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I. HDC Scope of supply / services:

Camera infrastructure, Sufficient Network bandwidth along with Infrastructure. The relaying server shall be installed on the premises. Support for Integration between the HDC camera & network infrastructure with the vendor Server. Support for Data transfer from relay server up to vendor cloud server. Camera feed details for configuration, IT/Cyber security Checklist, Plot Plans with camera position & area of coverage along with User List and Roles

VIDEO ANALYTICS

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SPECIAL CONDITIONS OF CONTRACT (SCC)

No. SDM(P&E)/927/ENQ/04/2024-25

Dated 12.06.2024

In case of any dispute, question or difference either during the execution of the work or any other time as to any matter or thing connected with or arising out of this Contract, the decision of the Sr. Dy. Manager (P&E), Haldia Dock Complex, thereon shall be final and binding upon all parties.

- 1. Duration of work:** 30 days will be provided for integration of the system with the existing camera surveillance facility after the details of the deployment of cameras in the scope of HDC is communicated to the vendor. Thereafter the contractor shall demonstrate its readiness with respect to the above scope of work and go live. A test of acceptance is to be carried out by HDC for the scope of work detailed above. Subject to acceptance of HDC, the services for video analytics will be provided for a period of 3 years including operation and tech-end support with defect liability obligation & Comprehensive Maintenance.

One service engineer from the vendor shall be deputed at Haldia Dock Complex, SMPK during the entire service duration of 3 years after go-live.

Delay in integration of Artificial Intelligence Based video analytics solution for monitoring of safety & security inside dock premises of Haldia Dock Complex, SMPK after providing the details of cameras to the vendor shall entail liquidated damages at rate of 0.5% per week to a maximum of 10% of the total contract value.

2. Availability

The Availability of the Platform can be assessed using the following formula:

Schedule operation time = Total Operation Time - (Outage due to site introduced Maintenance Activity + Force Majeure (if any))

Actual Operation time = Scheduled Operation Time – Downtime

Availability = (Actual operation time/schedule operation time) *100

Downtime will be calculated from reports submitted as per mutually agreed formats

HDC will be informed at least 48 hours in advance of Platform downtime in case of a critical requirement, and subsequent approval/acceptance will be taken from HDC.

Platform availability should be at least 99.5%

3. Penalty on unavailability of platform

If the platform unavailability on account of vendor exceeds 0.5% of total monthly hours, 0.1% of total monthly bill will be deducted as penalty for every hour of unavailability.

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Annexure -III**PRICE SCHEDULE****No. SDM(P&E)/927/ENQ/04/2024-25****Dated 12.06.2024**

[To be filled up and uploaded, duly signed & stamped]

Sl. No.	Item Description	Unit	Qt y.	Estimated (Without GST) (in Rs.)	
				Rate per unit	Amount
Part A-Integration of AL based software solution					
1.	Integration Artificial Intelligence Based video analytics solution for monitoring of safety & security inside dock premises of Haldia Dock Complex, SMPK	LS	01		
2.	Monthly cost for operation and tech-end support with defect liability obligation & Comprehensive Maintenance per camera solution.	Per camera	01		
				Total Amount: -	
				Total with GST=	

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Annexure -IV

SUGGESTIONS FROM VENDORS REGARDING PROJECT
TO BE FILLED BY THE VENDORS

No. SDM(P&E)/927 /ENQ/ 04 /2024-25

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