

Government of Nepal
Ministry of Industry, Commerce and Supplies
**Strategic Road Connectivity and Trade Improvement Project
(SRCTIP)**

Terms of Reference
of
Individual Gantry Crane Specialist (International)
Activity Reference:- SRCTIP/PCU/NITDB/CS/IC-077/078
(Time Based)

May, 2021

Nepal Intermodal Transport Development Board (NITDB)
Kupondole Lalitpur
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Terms of Reference and Scope of Services

Terms of Reference (TOR) for Individual Gantry Crane Specialist (International)

1. Background

The Project Development Objective (PDO) of the Strategic Road Connectivity and Trade Improvement Project (SRCTIP) is to improve the efficiency and safety of select transport infrastructure, improve the efficiency of cross border trade and strengthen capacity for Strategic Road Network management in Nepal. Of the project activities, those falling under Component 1, specifically 1.a Infrastructure facilities at Various Cross Border points, include physical works.

The trade facilitation component mainly comprise of development & improvement of the border infrastructure and laboratories in existing selected Inland Container Depot (ICD): Biratnagar, Birgunj and Bhairahawa. The specific project activities are as follows:

1. Improvement of the level and quality of border infrastructures in select locations in keeping with expected growth in trade volumes via those points.
2. Enhancement of the selected labs with equipment and/or accreditation to enhance market access for agricultural commodities.
3. Improvement of the access roads section for better linkage to transport and the trade,
4. Expanding and the improvement of the existing parking yards around ICD to enhance the connectivity and trade, and
5. Capacity enhancement through training and facilitation.

Under the component C1. a, NITDB is required to engage a consultant to prepare gantry crane specifications for rail based containers at Birgunj ICD.

The proposed Gantry Crane Specialist will be responsible to study the site specific requirement, assess the available suppliers and standards in the market, prepare a concept design, detail technical specifications for the Gantry Crane along with the cost estimate and justifications. The Consultant will support to prepare the bidding documents for the same and during the implementation phase the consultant will also support in assuring quality, supervise the erection and certify commissioning of the Gantry Crane and ensure the project works are carried out as per international Compliance Standards with safety. The consultant will be fully devoted to the proposed rail based gantry crane at ICD Birgunj and work under the NITDB.

2. Objectives

The overall objectives of this service is to provide support to NITDB for preparing concept design, detail technical specifications for Gantry Crane for procurement and supervise the installation works of Gantry Crane at Birgunj ICD.

The specific objectives are as follows:

- I. To assess the site condition at the proposed site of rail based ICD at Birgunj and based on the international standard practices, suggest suitable design and model of the Gantry Crane for handling rail based containers.
- II. While preparing the concept design the Consultant shall also look alternatives and justify the recommended concept design based on the consultations with the rail operator and ICD operator. While selection of design the operation and maintenance aspects should be considered.
- III. To provide the detail technical specification for the proposed rail based Gantry Crane with justification.
- IV. To provide cost estimate and financial analysis for suggested type of Gantry Crane considering the installation cost, operation cost and maintenance cost.
- V. Support to Prepare design built procurement document with the detailed technical specification of the gantry crane, bill of quantities, quality assurance requirements and tests, and qualification requirements for the suppliers.
- VI. Support to evaluate the technical and financial bids, where necessary.
- VII. Monitor, Supervise, and certify the installation and operation of the Gantry Crane.

3. Scope of Services

With the above set objectives, the **Gantry Crane Specialist** is required to provide time based support to assist NITDB in the following, but not limited:

- i. To study the current scenario of containers being handled at rail based ICD at Birgunj in terms of railway lines to be crossed, container volume, handling capacity and handling rate.
- ii. To assess the site for specific Gantry crane installation and operation which may include site selection, necessary site clearance, site modifications, site constraints, power source requirements, duration for installation and other necessary parameters. While doing so the Consultant shall consult with the rail operator and ICD operator and understand their problem and their want for effective operation of ICD containers loading and unloading.
- iii. To propose suitable design and specification of suggested Gantry crane based on the international market, standards and by comparing with available models and providing its merits and demerits. Justification for the proposed concept design to be based on perspective of installation, operation and maintenance.

- iv. To support preparing bidding document for the procurement and installation of the Gantry Crane with detail specification for the design, including the quality tests requirements, trainings required, bill of quantities, and qualification requirements for the Bidders
- v. Review the legal covenants of the Railway Service Agreement between Nepal and India and support prepare necessary documents for getting approval from the parties involved in the railway agreement. Accordingly, include the necessary provisions and Special Condition in the Contract necessary to implement the rail gantry crane supply and installation package.
- vi. To support in evaluation of bids in terms of technical assessment and financial evaluation, where necessary.
- vii. During supply, installation, and commissioning the Consultant to support the regular supervision, quality assurance and control, certify commissioning, trainings and the payments as per contract conditions.
- viii. To provide support in reviewing the specific training plan, training materials and conducted trainings to the local staff regarding during erection, commissioning, and operation and maintenance of Gantry Cranes. On the job trainings need to be considered to involve the local staff to transfer knowledge and experience in handling the operation and maintenance.
- ix. To provide the cost estimate for the best suited Gantry Crane with the financial analysis of the Gantry Crane based on Life Cycle Cost of the Gantry Crane as
 - a. Cost Benefit Ratio
 - b. Internal Rate of Return (IRR) and FIRR
 - c. Breakeven Analysis
- x. To provide detailed technical specification of the proposed Gantry Crane as per specific site condition including but not limited to following details:
 - a. Gantry Span and height
 - b. Container Stacking Height
 - c. Safe Working Load
 - d. Wheel Dimensions and Loading
 - e. Power Source Requirement
 - f. Performance parameters of Structural Steel works, Hoist and Gantry: Class of Utilization, State of Loading, Group Classification, Impact factor etc.
 - g. Handling speed of hoist in empty and loaded conditions, Trolley, and Gantry Travel cycle time
 - h. Working climatic conditions with relation to humidity, wind speed, ambient temperature, Noise level of the crane etc.
 - i. Detail specifications of Power pack and Drive control system i.e. Engine, Alternator, Engine Control Pane, shaft with differential for container stacking etc.

- j. Electrical Control Equipment System
- k. Gantry Travel System and Spreader System, Trolley System, Steering System and Hoist System
- l. AC motors at different parts like Hoist, Trolley, and Gantry etc.
- m. Brake Systems at Hoist, Trolley and Gantry
- n. Power Control Unit and Devices
- o. Control System and Crane Monitoring and Management System (CMS)
- p. Safety and Equipment Protection System
- q. Maintainability, Delivery Time, Warranty Period, Liability and Insurance, Testing and Commissioning, Training.
- xi. On the basis of site conditions and proposed installation and operation the Consultant shall be compliant to environmental management and Occupational Health and safety requirements which will be part of bidding document and need to be followed by the Supplier.
- xii. During the reporting period the Consultant shall also make necessary presentations to the NITDB/ MoICS/ World Bank management team, where necessary .

4. Qualification Requirement

Gantry Crane Specialist has to be qualified and experienced for the service and should meet following requirements:

- i. Minimum Bachelor's degree in Mechanical/Industrial/Electro-Mechanical Engineering or its relevant discipline with at least 7 years of experience in the related field and specific experience as Engineer in Gantry Crane Erection & Commissioning in at least Three (3) Gantry Crane Projects at least at two different locations preferably in the region.
- ii. Preferably, Master's Degree in Mechanical/Electro-Mechanical/Industrial/Design Engineering or relevant discipline with at least 5 years of experience in the related field and specific experience as Engineer in Gantry Crane Erection & Commissioning in at least Three (3) Gantry Crane Project at least at two different locations, preferably in the region.
- iii. Good knowledge and experience of quality assurance and control, hoisting and lifting equipment's installation, operation and maintenance.
- iv. Good Knowledge of environmental requirements and Health & Safety Standards.
- v. Good command in IT, MS-Office package and other basic computer skills;
- vi. Experience working in projects funded by World Bank or other Donor organization is preferable;
- vii. Good presentation, interpersonal and communication skills;
- viii. Excellent knowledge of English languages in speaking and writing.

5. Duration of Services

The Gantry Crane Specialist Consultant's service is required for 75 days over 2 years period during two phases. Phase 1 (4 months) starts with start of contract with Consultant up to award of contract for Supplier, and Phase 2 (18 months) starts with the Award of contract for Supplier.

Phase	Details	Duration	Remarks
1.	<ul style="list-style-type: none"> - Preparation of concept design, specifications of the Gantry Crane, bidding document and submission of financial analysis for the gantry crane. - Presentation at NITDB - Assistance in technical and financial evaluation of the Bids for Gantry Crane, as necessary 	30 days *	* From the date of contract signing
2.	<p>Work as a Supervision Consultant during installation, operation, and maintenance to provide overall support to the project</p> <p>2.1 First Supervision</p> <p>Inspection of Procured Materials</p> <p>Supervision of first phase of Installation including reviewing work schedule, quality assurance and control, Review and Certify payments, preparing contractual letters and supporting assessing and evaluating variations, extension of time, claims, if any</p> <p>Report to NITDB</p>	**	
	<p>2.2 Second Supervision</p> <p>Supervision of middle phase of Installation including reviewing work schedule quality assurance and control, Review and Certify payments, preparing contractual letters and supporting assessing and evaluating variations, extension of time, claims, if any</p>	15 Days	
	<p>Report to NITDB</p> <p>2.3 Final Supervision</p> <p>Supervision of last phase of Installation</p> <p>Testing & Commissioning of the Gantry Crane including quality assurance and control, Review and Certify payments, Completion certificates as required by the contract, preparing contractual letters and supporting assessing and evaluating variations, extension of time, claims, if any</p>	10 Days	** Starts After the award of contract for the Supplier and completes with Commissioning and end of Warranty and or maintenance period
	<p>Reviewing Training on operation and maintenance to local staff of operators and Knowledge Transfer to staff of NITDB</p> <p>Submission of Completion Report</p> <p>Presentation at NITDB</p> <p>2.4 Post operation during Warranty and or Maintenance period:</p>	15 Days	
		5 days	

	Support the NITDB to assess any defects and or maintenance need required and conducting such activities.		
<p>*** Between the Completion of Phase 1 and Start of Phase 2, there will be time gap (about 2 month) required for the procurement process and decision.</p> <p>Note: The duration also includes time spent in travelling.</p>			

Note:

The above number of events/ visits and input days' requirement is the client's suggestion. The consultants are advised to assess their own requirement and propose their own number of events/ visits and input days for efficient performance of their jobs as per the Terms of Reference.

6. Supervisor and Reporting Requirements

The Gantry Crane Specialist shall be under the immediate supervision of and will report to the Project Coordinator of SRCTIP and Executive Director (NITDB). S/he shall work closely with PCU and NITDB team including the Technical Advisors, Procurement Advisor and Sub project offices of SRCTIP as and when required. The consultant shall prepare necessary reports as prescribed below in the acceptable format as agreed by the NITDB.

Phase 1:

- i) Inception report
- ii) Report on concept design, specification, cost estimate, including the recommendation for the quality assurance and control, and qualification requirements for the suppliers.
- iii) Specific report on the technical and financial evaluation, as necessary.

Phase 2:

- i) First Supervision report incorporating the reviewing of work schedule, quality assurance and control, payments, recording contractual letters, assessment and evaluation of variations, extension of time, claims, if any.
- ii) Second Supervision report incorporating the reviewing of work schedule, quality assurance and control, payments, recording contractual letters, assessment and evaluation of variations, extension of time, claims, if any.
- iii) Final Supervision report incorporating the reviewing of work schedule, quality assurance and control, payments, recording training and contractual letters, assessment and evaluation of variations, extension of time, claims, commissioning certificate and or completion certificate, if any.

- iv) Final report at the end of Warranty or maintenance period incorporating the overall performance, issues encountered and action taken, recording training and contractual letters, assessment and evaluation of claims or disputes, final certificate, if any

7. Remuneration and Compensation

The Gantry Crane Specialist Consultant shall be provided with the remuneration and benefits as per the contract signed with NITDB. The contract will mention a per day rate of remuneration, subsistence allowance (per diem), transport costs and other reporting costs in the total contract amount for the contract period. The remuneration shall include all overhead, social charges, insurance for health and accidents, and other associated costs including local transport within Kathmandu. International airfare and other transport outside the Kathmandu valley shall be provided as per actual costs. The Specialist shall be responsible for all taxes and duties including income tax applicable as per the Government of Nepal rules and regulations. The specialist shall be paid visit/event interval based on invoices submitted to the NITDB and PCO of SRCTIP for actual period worked in the particular days supported by the reports as mentioned. Some of the works are required to be done after the site visit and actual inspection of works whereas, some of the works could be also done based on the virtual discussion and reporting from home based office, as agreed by NITDB.

8. Facilities to be provided NITDB

Following facilities shall be provided to the Specialist by the Project Coordination Office (PCO) at NITDB during the period of service:

- Office space with furniture
- Internet access
- Photocopying facilities
- Coordinating and facilitating the field visits and organizing the consultations with the ICD stakeholders and other related stakeholders, where necessary.

9. Selection Process

Selection of the Gantry Crane Specialist will be carried out in accordance with the selection procedure of Individual Consultant in the World Bank's 'Guidelines: Procurement Regulations for IPF Borrowers July 2016, Revised November 2017 and August 2018.

10. Contact for Additional Information and Application:

Further information related to selection and recruitment of the Gantry Crane Specialist may be obtained from the NITDB Office at Kupondole, Lalitpur. Interested candidates

are requested to submit Cover Letter and detailed Curriculum Vita (CV) in a sealed envelope or by email to the following address:

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Nepal

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