

Monitoring and Surveillance of Mining Operations

Geology & Mining Unit, Directorate of Industries,
Govt. of Uttarakhand

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Chapter -1: Introduction

In the state of Uttarakhand, the Geology and Mining Unit, Directorate of Industries has been separated from the original Directorate of Geology and Mining, U.P. which was created to look after the **MINERAL ECONOMICS** of the state has to be looked into by this department in the state of Uttarakhand.

Under the **Mineral Economics**, following operations are carried out by the department:-

1. To raise/increase the revenue of the State through both major and minor minerals
2. To carry out the mineral exploration

1.1 Mines Regulation and Mining Administration

Mining administration deals with the regulation and control of the mining activities. The department stream lines the mining operations according to the scientific norms. It also comprises: Processing of mineral concession applications, Demarcation of the Lease hold areas, Checking the transportation and storage of minerals, Commercial evaluations of the minerals, Royalty fixations, Minor mineral survey with respect to legal and commercial aspects, Prevention of illegal mining, Approval of mining plans in case of minor mineral lease hold areas, Monitoring and control with respect to safety and health of the labourers employed in the mines as proposed amendment in the Mines Act-1952. Regular inspections of the mining areas to check that: (i) The mines are been developed/ operated scientifically and (ii) The Mines Act, rules & regulations are being observed by the lessees considering the safety of the environment and ecology.

Rapid urbanization for last two decades has increased excessive demands of river bed minor mineral (RBM) for construction purpose. The State is rich in river bed minor mineral (RBM) specially the plain areas like Hardwar, Dehradun, Udham Singh Nagar and Nainital Districts. Approximately 90% of RBM have been excavated from these four districts and rest 10% from other nine districts. About 70% to 80% material is being transported to the neighbouring state like Uttar Pradesh, Delhi and Haryana. Therefore these four districts are very significant for revenue point of view. Mining Activities are administrated by Geology and Mining Department and mining operations, in most of the government land, are being carried out by government's

Corporations like Uttarakhand Forest Development Corporation, Garhwal Mandal Vikas Nigam (GMVN), Kumaon Mandal Vikas Nigam (KMVN). Apart from this some private leases have also been issued in private land.

In Uttarakhand, there are about 390 river bed mining sites located in government land and about 200 mining sites in private land. There are about 130 stone crushers/screening plant and about 1500 storage sites available in the state.

There are about 20 state exit points.

At present, only ten river bed minor mineral areas are under operation, in government land, after getting environmental clearances from Ministry of Environment and Forest, Government of India. These ten areas are located in three different districts:

Dehradun: Song I, Song II, Song III, Jakhan I, Jakhan II

Nainital: Gaula, Kosi, Dabka, Nandhor

Champawat: Sharda. These mining areas lies in forest land and presently operated by Uttarakhand Forest Development Corporation.

Chapter – 2: Tender Details

DIRECTOR, GEOLOGY AND MINING UNIT, DIRECTORATE OF INDUSTRIES, UTTARAKHAND(hereafter referred to as “the Department” in rest of the document)invites tender offers (Technical and Commercial) from reputed, experienced, technically and financially sound Company for providing a Turnkey Solution for Tracking and controlling unauthorized access of material at select mining sites and check unauthorized transport of material outside the state at the exit points of the Uttarakhand State.

Please note that this bid document is not for actual award of contract but to call for the technical bid and the rates as per commercial bid for “Monitoring and Surveillance of Mining Operations”.

Actual award of contract will follow the conditions as per this document. This document is given for enabling the bidders to know the processes existing in the department so as to guide them in filing up the technical and commercial bid for “Monitoring and Surveillance of Mining Operations”.

2.1 Eligibility Criteria for Bidder

Short listing of organizations will be based on their technical management, programmatic, financial and execution capacity to manage similar type of projects. Final selection will be done through a two stage technical and commercial evaluation system. The criteria for short listing and final selection of such Implementing Agency include the following:

- Experience of implementing integrated security project with IT enabled Surveillance Systems
- Should have arrangements/ manpower to support required infrastructure in Uttarakhand State during the contract period.
- Capacity to expand the scale of solution and implementation to the entire state.
- Consortia/ JV are allowed.

Pre-Qualification / Eligibility

Sl. No.	Pre -Qualification Criteria
1	The bidder (each bidder, in case of consortia / JV) should be an organization or its subsidiary/ division/ sub-division/ branch/ business unit registered in India under the companies Act 1956 and shall be in security implementation business for more than three years.

2	The bidder (lead bidder in case of consortia / JV) should have a minimum turnover of Rs. 30 Crores (Parent company turnover would be considered for only 100 % subsidiary/ division/ sub-division/ branch/ business unit) in each of the last three years (Financial Years: 2010-11, 2011-12 and 2012-13). It should have profits (positive networth) in each of these three financial years.
3	The bidder (lead bidder in case of consortia / JV) should have at least 30 full time qualified technical personnel (including Security implementation, Designing/ Project Management & implementation team).
4	The bidder (lead bidder in case of consortia / JV) must have executed at least one project of Integrated security implementation (including cameras, access control and central command centre) worth Two Crore Rupees or above for any of the following national critical infrastructure: a) Mining Sector, or b) City Surveillance, or c) Major Port or Airport, or d) Mass Transit System, or e) Oil & Gas Establishment
5	The Bidder (each bidder, in case of consortia / JV) should not have been blacklisted by any government organization in India.

2.2 Proposal Preparation

Bidder is expected to examine all instructions, forms, terms and requirements in the RFP document and prepare the proposal accordingly. Failure to furnish all information required by the RFP document or submission of a proposal not substantially responsive to the RFP document in every respect may result in the rejection of proposal.

The proposals should be submitted in 3 (Three) parts as mentioned in the following section A, B and C.

A. Pre-Qualification Proposal

- A copy of RFP, duly stamped and signed on each page by the authorized signatory.
- Covering letter of bid on the bidder's letter-head (Annexure-I)
 - a. Certifying that the period of validity of bid is 90 days from the last date of submission of proposal, and
 - b. Asserting that the bidder is quoting for all the items (including services) mentioned in the tender.
- EMD in the form of a Demand Draft issued by a Scheduled Commercialized /

Nationalized Bank (except Co-operative bank), in favour of **Director, Geology & Mining Unit, Directorate of Industries, Uttarakhand, Dehradun** payable at Dehradun.

- Tender Fees in the form of demand draft or Proof of submission of tender fees.
- A registered Power-of-Attorney granting the person signing the proposal the right to bind the bidder and company's registered address including person's name/designation, email, phone, fax and mobile number for official correspondence.
- Company Profile (Annexure-II)
- Certificate of Incorporation if any or relevant registration documents.
- Audited annual financial results (balance sheet and profit & loss statements) of the bidder for the last three financial years ending 31st March 2013.

B. Technical Proposal

- Proposal particulars
- Detailed Project Schedule including analysis, development etc. for delivering solution to the Department.
- Methodology & Schedule of Solution Deliverables in phase manner
- Methodology for Information Dissemination
- Methodology & Schedule for Capacity Building to create the awareness about solution for its smooth implementation
- Qualification and Deployment Schedule of the staff proposed for the project Functionalities and all modules of application.
- CVs of Key persons and technical resources to be engaged in the Project.
- Deviation if any / Any other document as required in the RFP

C. Commercial Proposal

- Commercial Bid Details (As per Annexure - VII)

2.3 Bid Security (EMD), Performance Bank Guarantee & Manufacturer's Authorization

- The bidder shall furnish a bid security (EMD) of Rs. 20,00,000/- (Rs. Twenty Lakhs only) as per Annexure – III.
- The Bid Security (EMD) shall be in Indian Rupees (INR) and shall be in the form of Demand Draft, issued by a Scheduled Commercialized / Nationalized Bank (except Co-operative bank) in India, in favour of Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand, Dehradun payable at Dehradun.
- The EMD shall be valid for at least 180 (one hundred and eighty) days from the date of submission of proposal. No interest shall be payable on Bid Security under any circumstances.
- Unsuccessful Bidder's Bid security shall be discharged or returned within 60 (sixty) days of expiration of the period of proposal validity prescribed by the Tenderer or after awarding tender to successful Bidder.
- The successful Bidder's EMD shall be discharged upon the signing of agreement by the Bidder.
- The successful bidder will have to submit the requisite security deposit @10% of the total value of contract in the form of Performance Bank Guarantee within 15 days of award of contract (as per Annexure – IV) and shall be valid for a period of 60 days beyond the date of completion of all contractual obligations of supplier. After the completion of all contractual obligations, security deposit should be returned to the concerned supplier within 60 days.
- The bidder will have to submit the requisite manufacturer authorization form as per Annexure-V.
- The Bid security will be forfeited at the discretion of Tenderer on account of one or more of the following reasons:
 - The Bidder withdraws its Proposal during the period of proposal validity
 - Bidder does not respond to requests for clarification of its proposal
 - Bidder fails to co-operate in the Proposal evaluation process
 - In case of a successful Bidder, the said Bidder fails to sign the Agreement in time
- Client Reference list (similar domain as per the requirements in this RFP).
- Undertaking for not being blacklisted by any State / Central Govt. by the bidder.

- Undertaking by bidder stating that they have read and understood the entire tender document and agree with all the terms and conditions stated in the RFP.
- Undertaking that the order if provided shall be completed within the timelines defined in this document.
- Permanent Account Number (PAN) from Income Tax authorities of bidder along with certified photocopy.
- Service Tax and VAT Details of bidder.
- Other documents as mentioned in the Eligibility Criteria section of this document.

All documentation is required to be in English.

2.4 Proposal Submission

The proposals submitted should have all pages numbered. It should also have an index giving page wise information of documents. Proposal that are incomplete or not in prescribed format will be summarily rejected.

- The Bidder shall submit two hard copies and one soft copy in CD (in Microsoft Word format) of pre-qualification and technical proposals as described below:
 - o **Pre-qualification Proposal** - hard copies separately, clearly marking “Pre-qualification Proposal – ORIGINAL”, “Pre-qualification Proposal – COPY” and soft copy on CD clearly marking “Pre-qualification Proposal (Soft Copy) - Tender No: 01/Surveillance/IT/DD/GMU/2013-14 dated 18th September 2013”.
 - o **Technical Proposal** - hard copies separately (as per Annexure - VI), clearly marking “Technical Proposal – ORIGINAL”, “Technical Proposal – COPY” and soft copy on CD clearly marking “Technical Proposal (Soft Copy) - Tender No: 01/Surveillance/IT/DD/GMU/2013-14 dated 18th September 2013”.
- In case of any discrepancy between the soft copy and hard copy, the details in hard copy shall prevail. In case of any discrepancy between “ORIGINAL” and “COPY” of the proposals, the details in “ORIGINAL” shall prevail.
- In case of discrepancy between amount given in words and figures, the details given in words shall prevail.
- Prices should not be indicated in the Pre-Qualification and Technical Proposals.

- All the columns of the quotation form shall be duly, properly and exhaustively filled in. The rates and units shall not be overwritten. Rates shall always be both in the figures and words.
- The proposals have to be submitted in four parts, viz.-
 - **Envelope – 1:** Containing EMD in the form of Demand Draft, Demand Draft for Tender Fees or proof of Tender fees, power of attorney, one signed copy of RFP and two hard copies and one soft copy of Pre-Qualification Proposal, super scribed as “Pre-Qualification Proposal - Tender No: 01/Surveillance/IT/DD/GMU/2013-14 dated 18th September 2013”.
 - **Envelope – 2:** Containing two hard copies and one soft copy of detailed Technical Proposal (as per Annexure - VI) super scribed as “Technical Proposal - Tender No: 01/Surveillance/IT/DD/GMU/2013-14 dated 18th September 2013”.
 - **Envelope – 3:** Both of the above sealed envelopes should again be placed in a single sealed envelope, super scribed as “Monitoring and Surveillance of Mining Operations” Tender No: 01/Surveillance/IT/DD/GMU/2013-14 dated 18th September 2013 Bid From: _____.
 - **Envelope – 4:** Containing the commercial proposal (as per Annexure - VII) has to be submitted separately with label super scribed as “Commercial Proposal for Monitoring and Surveillance of Mining Operations” Tender No: 01/Surveillance/IT/DD/GMU/2013-14 dated 18th September 2013 Bid From: _____.
- The Bidder or Company is allowed to submit only one proposal against this RFP. The bidder has to submit the complete proposal not in part or for particular quantum of work, such proposal will automatically be disqualified without any intimation to bidder. References to previous or on-going proposals will be not considered.
- The Commercial Bid as prescribed in Annexure - VII should be submitted as per the format provided in RFP only. The bid should also mention the Statutory Levies.
- The prices quoted by the bidder shall be in sufficient detail to enable the Tenderer to arrive at the price of equipment/system offered.
- The prices quoted shall in Indian Rupee (INR).
- The tenders not submitted as specified above will be summarily rejected.

- If any or all of the information asked in the RFP are not available in the Commercial Proposal the bid is liable for rejection.

2.5 Proposal Validity

The proposals shall remain valid for a period of 90 days from the last date of submission of tender. If required, the Tenderer may ask the bidders to extend the proposal validity in writing.

Proposals of the bidders who do not agree to extend the validity of proposal will be rejected and EMD will be forfeited. A bidder granting the request for extension of proposal validity will not be allowed to modify its proposal or put any condition for extending the proposal validity.

2.6 Language

All Proposals, correspondence and documents related to proposals, shall be written in the English language. Supporting documents and printed literature furnished by the Bidder may be in another language, provided they are accompanied by an accurate translation of the relevant passages in English language.

2.7 Late Proposals

The bidder will not be able to submit the proposals after final submission date and time is over. The physical document of proposal, as described in RFP, received by the Tenderer after final submission date and time of proposal prescribed in the RFP document may not be considered and the entire proposal may be rejected. The EMD of such proposals will be returned to the Bidder.

The Bidder is not allowed to modify its proposal subsequent to the final submission of proposals. The Bidders cannot withdraw the proposal during the period between the last date for receipt of proposals and the expiry of proposal validity period specified in the RFP. A withdrawal of proposal during proposal validity period may result in the forfeiture of its EMD from the Bidder.

2.8 Modification and Withdrawal of Proposal

The Bidder is not allowed to modify its proposal subsequent to the final submission of proposals. The Bidders cannot withdraw the proposal during the period between the last date for receipt of proposals and the expiry of proposal validity period specified in the RFP. A withdrawal of proposal during proposal validity period may result in the forfeiture of its EMD from the Bidder.

2.9 Right to Accept Proposal

The Tenderer reserves the right to accept or reject any or all Proposals at any time prior to award of contract, without thereby incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the grounds of such decision.

2.10 Proposal Forms

Wherever a specific form is prescribed in the RFP document, the Bidder shall use the form to provide relevant information. If the form does not provide space for any required information, space at the end of the form or additional sheets shall be used to convey the said information.

For all other cases, the Bidder shall design a form to hold the required information. The Tenderer may not be bound by any printed conditions or provisions in the Proposal Forms designed by the bidder.

2.11 Local Conditions

Each Bidder is expected to get fully acquainted with the local conditions and factors, such as historical, geographical, social, political, legal, administrative, and/or infrastructure etc., which would have any effect on the performance of the contract and /or the cost.

The Bidder is expected to know all conditions and factors, which may have any effect on the execution of the contract after issue of Letter of Award as described in the bidding documents. The Tenderer shall not entertain any request for clarification from the Bidder regarding such local conditions.

It is the Bidder's responsibility that such factors have properly been investigated and considered while submitting the bid proposals and no claim whatsoever including those for financial adjustment to the contract awarded under the bidding documents will be entertained by the Tenderer. Neither any change in the time schedule of the contract nor any financial adjustments arising thereof shall be permitted by the Tenderer on account of failure of the Bidder to know the local laws / conditions.

The Bidder is expected to visit and examine the location of mines with prior permission of **Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand**, and its surroundings and obtain all information that may be necessary for preparing the bid at their own interest and cost.

2.12 Contacting the Tenderer

Any effort by a Bidder influencing the Tenderer's bid evaluation, bid comparison or contract award decisions may result in rejection of proposal.

Bidder shall not approach Department's officers or any concerned official after office hours and/ or outside Department's office premises, from the time of proposal opening till the time of award of Contract.

2.13 Opening of Bids

The Evaluation Committee or its authorized representative will open the tenders. Sequence of opening shall be as follows-

- Pre-Qualification Proposal
- Technical Proposal
- Commercial Proposal

The Proposals shall be opened as per the specified date and time in the RFP. First, the envelope containing Pre-qualification Proposal will be opened and evaluated followed by the technical proposal. The Proposals will be evaluated for being substantially responsive. The proposals will be treated as "not substantially responsive" in case of following events-

- Envelopes / documents not submitted as prescribed and in time
- Proposal is not signed, sealed or page numbered as stipulated
- Tender Fees or proof of Tender fees not deposited
- No or Improper Bid Security (EMD)
- Is not accompanied by Power of Attorney
- Does not contain all the information as required and prescribed in RFP
- Does not meet the qualifying criterion
- Any other irregularity that disqualifies the bid

In all such cases, the proposals may be treated as not responsive and even the technical proposals may not be evaluated. The technical proposals of the only substantially responsive proposals will be evaluated. Following the evaluation of proposals for being "substantially responsive" the technical evaluation of the proposal will be carried out. During the technical evaluation the responses provided in pre-qualification proposal and technical proposal will be evaluated out of 100 (one hundred) marks. The bidder should qualify during technical

evaluation by scoring minimum 70 (Seventy) marks for the criteria defined and should have furnished all the documents in the prescribed manner.

Once the technical evaluation is complete the commercial proposals of technically qualified bidders would be opened.

2.14 Procedure for Bidding

- **Collection of Bid Document**

A set of bid documents and terms and conditions of bid may be obtained by any interested eligible firm / organisation from the address or may also be downloaded from the website as mentioned in section 2.15 of this document. A letter by authorized company representative on the company's letter head is to be submitted at the time of purchase of tender. In case of downloading the tender document from the website a scan of the authorization letter may be sent to email id dir-dgm-uk@nic.in . Without such authorized letter the bid will be considered invalid.

- **Tender/ Processing Fee**

A non-refundable tender / processing fee of Rs. 5,000.00 (Rupees Five Thousand) only, shall be submitted in the form of demand draft in favour of **“Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand” payable at Dehradun** with the Technical Bid.

- **Earnest Money**

Earnest Money of Rs. 20,00,000/- (Rupees Twenty Lakhs) only, shall be submitted in the form of Demand Draft of a scheduled bank duly pledged in favour of **“Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand” payable at Dehradun** with the Technical Bid.

- **Contact Person**

The address and contact details for collecting tender documents, submission of proposal and requesting clarifications is:

Director,
Geology & Mining Unit,
Directorate of Industries,
Bhopalpani, Raipur Thana Road,

Dehradun, Uttarakhand

Email-id: dir-dgm-uk@nic.in

• **Submission of Bids**

- The Technical Bids shall not indicate any particulars of the Commercial Bids otherwise the bids shall be liable to be rejected. All Technical documents like literature, catalogues, etc., shall be placed in the same sealed cover along with a copy of Service Tax Registration Certificate and Income Tax Clearance Certificate.
- The proposal shall clearly indicate the names and designations of the people who shall be associated with the project and profile of these personnel to be submitted in the technical bid.
- Each page of bid should be numbered and signed by the authorized signatory with the seal of the firm and the forwarding letter must indicate the details of the enclosures attached.
- Proposals and all connected documents and subsequent reports (in case of selection) should be submitted in ENGLISH only.
- The bid should be on a turnkey basis including solution approach, bill of material, functionalities provided, implementation methodology and schedule for three years and support & maintenance. It should also indicate the change in Business Processes and the support required from the Government to execute the solution efficiently.
- Proposals must remain valid 90 days after the last date for submission.
- Bidders are required to state local cost in the Indian Currency only.

2.15 The Bid Schedule

The Bid Schedule shall be as under:

Sale of Bid Documents	At the office of “Director, Geology & Mining Unit, Directorate of Industries, Bhopalpani, Raipur Thana Road, Dehradun, Uttarakhand” between 11:00 hrs to 15:00 hrs on all working days from 23 rd September to 5 th October 2013. It may also be downloaded from http://dgm.uk.gov.in website.
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Pre-Bid Queries	To be submitted by 5 th October 2013 by email to dir-dgm-uk@nic.in
Pre-bid Meeting	On 7 th October 2013 at 15:00 Hrs
Last Date of Receipt of Bid Proposals	21 st October 2013 upto 14:00 Hrs
Opening of Pre-Qualification & Technical Bids	21 st October 2013 at 14:30 Hrs
Opening of Commercial Bids	To be intimated later

The Technical Bids shall be opened at the office of Director, Geology & Mining Unit, Directorate of Industries, Bhopalpani, Raipur Thana Road, Dehradun, Uttarakhand by the Evaluation Committee in the presence of bidders who wish to participate.

2.16 Method of Selection of Bidder

The selection process will comprise of the following:

- Pre-Qualification Criteria
 - Technical Bid Evaluation
 - Commercial Bid Evaluation
- **Pre-Qualification Criteria**
Bidders who meet the pre-qualifications/eligibility requirements would be considered as qualified to move to the next stage of Technical Bid Evaluation.

Eligibility of the bidders will be checked as per the following:

Sl. No.	Pre -Qualification Criteria	Document Required
1	The bidder (each bidder, in case of consortia / JV) should be an organization or its subsidiary/ division/ sub-division/ branch/ business unit registered in India under the companies Act 1956 and shall be in surveillance & security implementation business for more than three	Registration certificate and bidder must provide work orders/ POs indicating the work done by them in Security Implementation for more than

	years.	three years
2	The bidder (lead bidder in case of consortia / JV) should have a minimum turnover of Rs. 20 Crores in each of the last three years (Financial Years: 2010-11, 2011-12 and 2012-13). It should have profits in each of these three financial years.	Audited financial statements or Auditor's Certificate shall be submitted along with the certificate from authorized signatory from the company.
3	The bidder (lead bidder in case of consortia / JV) should have at least 30 full time qualified technical personnel (including Security implementation, Designing/ Project Management & implementation team).	Certificate from HR along with letter signed by authorized signatory of the company to be submitted. Profile of the technical team which will be executing the project.
4	The bidder (lead bidder in case of consortia / JV) must have executed at least one project of Integrated security implementation (including cameras, access control and central command centre) worth Two Crore Rupees or above for any of the following national critical infrastructure: a) Mining Sector, or b) City Surveillance, or c) Major Port or Airport, or d) Mass Transit System, or e) Oil & Gas Establishment	Work Orders / Purchase Orders or Completion Certificates shall be furnished.
5	The Bidder (each bidder, in case of consortia / JV) should not have been blacklisted by any government organization in India.	A Self Certified letter

- **Technical Bid Evaluation**

The technical evaluation of bids shall be done by an Evaluation Committee as may be constituted by the department.

Evaluation Criteria

- The bidder should be authorized by its technology OEM for all the equipment and by the owner of the MIS & Application Development Platform to quote for the bid. The authorization certificates should be submitted by the bidder.

- The technology OEM of the equipment quoted for should be profitable in the last 3 consecutive financial years.
- The technology OEM of the equipment quoted for should have a minimum of 10 custom paid spare depots in India to support failure of equipment's.
- The technology OEM of the equipment quoted should support 4 hours delivery against defectives in at-least 5 major cities in India.
- The technology OEM should support next business day delivery against defective spares in major locations in India. The technology OEM should have 24x7x365 support in India.
- The technology OEM should have option of supporting customers directly if needed & the support information including delivery against defectives or status of case should be available through web portals
- The Network Solution i.e. Router and Switches, Wireless LAN, Network Security preferably should be from single OEM. This is done to have better integration between all products.
- The Physical Security Solutions i.e. Video Surveillance with Command Control features, IP cameras, network video recording system preferably should be from single OEM. This is done to have better integration between all products. Also OEM should have local capability for the integrations & services for the above with support from System Integrator to avoid integration challenges.
- Technology OEM shall have certification ISO 9001:2000 & ISO 14001. All hardware products quoted should be UL certified.
- Technology OEM should furnish confirmation on authorized letterhead regarding none of the products quoted will be declared End of Sale for next one year.
- Technology OEM should have at least 1 reference in India of Integrated physical security system with video surveillance system having minimum deployment of 200 cameras, Central Command Centre, ANPR integrations.
- All IT equipment provided as part of this project should be IPv6 compliant.

Scoring Model

The following criteria shall be used to evaluate and arrive at the score for the technical bid. All the bids scoring 70 marks and above in the technical evaluation will be qualified for commercial bid opening.

Sl. No.	Qualification Criteria	Marks
A	Experience and Organisational Strength	20
1	Past Project Experience of implementing Integrated Surveillance & Security System projects in last three years in India	5
2	Qualified Manpower/ experts/ technical staff to design, implement & maintain Integrated security projects	5
3	Bidder's matching Technical Evaluation criteria under the heading 'Method of Selection of Bidder'	10
B	Technical Design & Architecture	50
1	Simple and configurable MIS & Application Development facility for web and mobile platforms to cater to dynamic requirements	35
2	Network architecture and components- features & functionality	15
C	Solution Approach and Scalability	30
1	Implementing Agency understanding of the project needs, technical justification of the solution and specification, BOM methodology of executing the project and overall technical response quality (If required, bidders need to give presentation) -based on assessment	30
	Grand Total	100

- The Bidder would be required to give a presentation on the aforesaid parameters after submission of bids and before opening of commercial bids on a date which would be declared by the department.
- After Technical evaluation is completed the department shall inform those firms whose proposals did not meet the minimum qualifying mark or were considered non responsive to the terms of reference and the commercial proposals will be returned unopened after completing the selection process. Selected bidders, who have scored the minimum qualifying score, shall be informed about the date of opening of commercial bids and they may attend the opening of commercial bids at the office of the Director.

- **Commercial Bid Evaluation**

- Bidders are required to quote a fixed amount for 'Supply & installation of entire system' and for 'O&M of the System for three Years' which would be inclusive of all taxes, levies and duties. The Bidders are required to provide the quote for the system which would include the sites as mentioned in the Project Scope Section of this RFP document. Additionally, Commercial Bids should contain prices in a modular form, clearly distinguishing between fixed and variable costs, and mentioning unit prices for each item in the proposal.
- The commercial proposals of the technically qualified firms will be opened by the Evaluation Committee in presence of representatives of those firms whose bids are shortlisted for Commercial Evaluation.
- The proposal with the lowest evaluated cost will be selected for award of the contract.
- The proposal for the internet connectivity will not form part of the commercial evaluation of this RFP and will be considered separately.

2.17 Engagement of Firm/ Organization

- The successful bidder shall enter into a contract with the department in the prescribed format and shall commence the assignment as per the schedule assigned by the department.
- If the bidder, finally selected for the award of contract on basis of above procedure fails to enter into a contract within the time limit as may be prescribed by the department, the earnest money deposited by the bidder shall be forfeited / encashed by the department.

2.18 Payment Terms

- Project value of Supply, Installation & Implementation
 - Advance: 10 % of project value for resource mobilization & work commencement
 - Supply of Material: 40 % of project value
 - Go-Live & Handover of all the phases: 25 % of project value
 - After completion of 1st year of Handover: 12.5 % of project value
 - After completion of 2nd year of Handover: 12.5 % of project value

Note - Advance for resource mobilization & work commencement, as mentioned above, would be given only after submission of the requisite Performance Bank Guarantee as mentioned in section 2.3 of this document.

2.19 Confidentiality

As used herein, the term “Confidential Information” means any information, including information created by or for the other party, whether written or oral, which relates to internal controls, computer or data processing programs, algorithms, electronic data processing applications, routines, subroutines, techniques or systems, or information concerning the business or financial affairs and methods of operation or proposed methods of operation, accounts, transactions, proposed transactions or security procedures of either party or any of its affiliates, or any client of either party, except such information which is in the public domain at the time of its disclosure or thereafter enters the public domain other than as a result of a breach of duty on the part of the party receiving such information. It is the express intent of the parties that all the business process and methods used by the Bidder in rendering the services hereunder are the Confidential Information of the Bidder.

The Bidder shall keep confidential any information related to this tender with the same degree of care as it would treat its own confidential information. The Bidders shall note that the confidential information will be used only for the purposes of this tender and shall not be disclosed to any third party for any reason whatsoever.

At all times during the performance of the Services, the Bidder shall abide by all applicable security rules, act, policies, standards, guidelines and procedures exist in the Department. The Bidder should note that before any of its employee or assignee is given access to the

Confidential Information, each such employee and assignees shall agree to be bound by the term of this tender and such rules, policies, standards, guidelines and procedures by its employees or agents.

Note: The successful bidder is required to keep the data confidential and should not share the data to any other organisation or individual or any third party or the employees of the organisation.

It is very important that none of the bidders or organisations or any person belonging directly or indirectly to the organisation shall share entire or any or part of the data to any other state or country or any advertising agency or any such third party which can result to the misuse of the same. The data protection act as per the policy of Government shall be considerable for the data being provided to the successful bidder for any purpose.

Any organisation failing to abide with the above mentioned point or breaches the data protection or confidentiality of the data, shall be liable for legal actions.

2.20 Arbitration

No case shall be filed on the terms and conditions of the RFP Document. No case shall be filed on the rights and prerogatives reserved by the Department.

Any dispute or difference under or arising out of or in respect of the RFP/Agreement/Accepted Contract may be referred to the sole Arbitrator, a person appointed by the Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand, Dehradun and his decision in the matter will be final and binding on the contractor and the Company. The arbitration shall be carried out as per Arbitration Act, 1996 and Rules made there under as amended from time to time.

The language of the arbitration proceedings and that of all documents and communications between the parties shall be in English.

Note: The Court of Dehradun will have the jurisdiction to address any unsettled dispute.

(Note: Submission or cancellation of contract at risk and cost of the contractor if awarded)

2.21 Termination of RFP

The Department also reserves right to Terminate/Cancel RFP at any time or stage of Bid without

giving any reasons. In such case of termination, the EMD shall be returned to the bidder. However, the RFP document fee shall remain non-refundable.

2.22 Format for Pre-Bid Queries

A pre-bid meeting would be organized as per the date and time mentioned in section 2.15 of this document.

A prospective bidder requiring any clarification on the RFP document may submit his queries as indicated in section 2.15 of this document. Pre-bid queries must reach in writing in the specified format only (softcopy by email to dir-dgm-uk@nic.in) and hard copy to tendering authority as per the dates specified in section 2.15. The queries must originate from the bidder only. Queries made otherwise will not be entertained.

Sl. No.	Name of the Bidder	RFP Chapter No.	RFP Section No.	RFP Page No.	Query or Clarification Sought	Remark from Bidder

The queries not adhering to the above mentioned format shall not be responded to.

Chapter – 3: Project Details

The department intends to have an Information & Communication Technology (ICT) based system for the mining operations. This system will target automation of the transit pass process along-with surveillance, material administration and vehicle tracking.

3.1 Objectives of the Project

Following are the objectives of this project:

- **To minimize undue revenue losses significantly by implementing the ideal processes and their effective tracking, monitoring and controlling**

Critical decisions at the sites (e.g. weight, permission to enter / exit etc) are made by operators. Since functions driven by human interventions are prone to manipulations either under external influence or for personal benefit, application of well-designed technology to automate these processes and minimize human intervention would not only eliminate the possibility of any deviation but will also empower department with information at granular level at button clicks.

- **To monitor and prosecute the trespassers with valid evidence**

Officers depend on informers or random inspections to catch illegal mining and involved people on the site, but with unwarranted nexus of such people they get alarmed of the raid in advance and mostly manage to flee. Using technology based surveillance will empower department to remotely monitor the site and create evidence to identify the involved people, vehicles for further investigations, interrogations, arrest etc.

- **To create a transparent and uniform information system across departments**

Updated and real time information is vital for planning and decision making at any level in an organization. Since these are isolated executing bodies. Lack of convergence amongst them adversely impacts the overall policy and plan making. A uniform information system tied up with real time onsite statistics will facilitate Dept. of Industries and Govt. in efficient management. The proposed software solution should have the capability to quickly configure multiple mobile and web based applications as per the dynamic requirements as they arise over a period of time to make the solution effective.

Following is envisaged as part of this project:

- **Electronic Transit Passes (MM-11 and 'J' Form)**
Currently all MM-11 and 'J' Forms are being issued manually. Automating the issue of all necessary Transit Passes through the system will enable tracking of the entire chain of events from the mining at the river bed to crushing sites to movement of material out of state.
- **Surveillance at the State Exit Points and Mining Sites**
As the sites are mostly located away from the office of the line department, it becomes very difficult for the concerned officials to create evidence of reported issues on site. Onsite surveillance and historical archive of such surveillance will help officials to take remedial actions.
- **Tracking of vehicles**
Currently registration number of vehicles is used as the identifier to make decisions like permit validity, allowed weight etc. In order to avoid forged registration number on vehicles OR instances of multiple entries/ exits, a unique mechanism is required to track the entries/ exits and validity of the vehicles used.
- **Minimizing human role**
The weighing and generation of entry and exit slips of the moving vehicles should be automatic, i.e., the current two-step process of weighing and operator feeding the weigh bridge reading into the computer to generate entry/ exit passes should be converted into an automatic and seamless step of printing of actual reading.
- **Centralized monitoring**
Any onsite information like weight of certain vehicle, vehicle tracking and surveillance footage should be available at the centralized control room of the department.
- **Customized management information**
Line department should be able to produce various management reports linked to real time and actual onsite statistics, viz. number of vehicles entered, total weight of the accessed material from the site, revenue earning etc.

3.2 Scope of Work

The broad scope of work is as below:

1. Generation of Transit Passes
 - Electronic generation of Transit Passes (MM-11 & Form-J) for all sites across the state

2. Surveillance at State Exit Points:
 - RFID based Exit Authentication & Access Control System
 - Automated boom barriers at the Exit Points
 - CCTV based Surveillance system
3. Surveillance at Mining Sites:
 - RFID based Entry / Exit Authentication & Access Control System
 - Weigh bridge with Material dispatch system
 - Automated boom barriers
 - CCTV based Surveillance system at Entry / Exit gate and Weigh bridges
 - Establishment of Master and Slave booths along with connectivity between them
4. Central Command Centre
 - Centralized Monitoring System
 - Centralized Management Information System
5. Connectivity of Master Booth with Central Command Centre
6. Connectivity of State Exit Points with Central Command Centre

3.3 Sites

Mining Locations

The Department is planning to deploy the Mining Monitoring and Surveillance System initially at the following 5 sites:

Sl. No.	District	Name of Lot (site)	Area In Hectare	No. of Gates	No. of Booths
1	Dehradun	Song I	225	02	a) One Master Booth
2		Song II	273	02	b) Three Slave Booths
3		Song III	270	01	One Master Booth
4		Jakhan I	195	02	a) One Master Booth
5		Jakhan II	100	02	b) Three Slave Booths

Gates of each site will have a booth.

Note - Number of sites / gates mentioned above is indicative. Department reserves the right to increase or decrease the sites / gates.

State Exit Points

Sl. No.	District	Number of Exit Points	Location of Exit Point	No. of Booths
1	Dehradun	4	Kulhan	1
2			Asharodi	1
3			Timli	1
4			Dhalipur	1
4	Haridwar	5	Chiriapur	1
5			Chauli	1
6			Narsan	1
7			Amarpur	1
8			Tugalpur	1

Note:

- Bidders are advised to do their own assessment of the above mentioned Mining Locations and State Exit Points before submitting their bids.
- Site for state exit points will be provided by the department. Any additional infrastructure to be created at state exit points like creation of an extra lane etc would be handled by the department.

3.4 Deliverables and Timelines

Phase 1: MIS implementation for MM11/ J-Form

Phase 2: MIS implementation for State Exit points

Phase 3: Installation and Commissioning of Network and Surveillance equipment at the mining site

Deliverables & Timelines for Phase-I

Deliverables	Time line (In weeks) after award of the project	Remarks
Preliminary Assessment Report including AS-IS, TO-BE and BPR process	2 Weeks	Department shall provide the necessary information of rules, frame work, Procedure and finally sign off

System Requirement Specification and Design Document	3 Weeks	Department shall provide the necessary sign off for software development
Implementation of Phase 1 (MM11/ J – Form)	5 Weeks	Software Implementation & Hosting of application.
Training, UAT & Go-Live	2 Weeks	Department shall check the functionality of system to make the system live

Deliverables & Timelines for Phase-II

Deliverables	Time line (In weeks) after award of the project	Remarks
Preliminary Assessment Report including AS-IS, TO-BE and BPR process	4 Weeks	Department shall provide the necessary information of rules, frame work, Procedure and finally sign off.
System Requirement Specification and Design Document	4 Weeks	Department shall provide the necessary sign off for software development.
Implementation of Phase 2 (MIS implementation for State Exit Points)	13 Weeks	Supply, installation and commissioning of all the components required for Phase II.
Training, UAT & Go-Live	3 Weeks	Department shall check the functionality of system to make the system live.

Deliverables & Timelines for Phase-III

Deliverables	Time line (In weeks) after award of the project	Remarks
Preliminary Assessment Report including AS-IS, TO-BE and BPR process	4 Weeks	Department shall provide the necessary information of rules, frame work, Procedure and finally sign off
System Requirement Specification and Design Document	4 Weeks	Department shall provide the necessary sign off for software development
Implementation of Phase 3 (Installation and Commissioning of Network and Surveillance equipment at the mining site)	13 Weeks	Supply, installation and commissioning of all the components required for Phase III.

Training, UAT & Go-Live	3 Weeks	Department shall check the functionality of system to make the system live
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Note:

- a) After go-live of each phase, it will be taken over by the department. Department will make necessary arrangements in terms of manpower for day-to-day running of the system.
- b) After hand-over of each phase, bidder will have to ensure that the system is up and running as per the SLAs defined in chapter-5 of this document.

3.5 Bandwidth Requirement

Following are the bandwidth requirements.

a) From mining site to central command centre

The bandwidth should be calculated keeping into consideration the following guidelines. It may change as per the design of the bidder:

Sl. No.	District	Name of Lot (site)	No. of Gates	Bandwidth Requirement
1	Dehradun	Song I	02	Min. 4 Mbps
2		Song II	02	Min. 4 Mbps
3		Song III	01	Min. 4 Mbps
4		Jakhan I	02	Min. 4 Mbps
5		Jakhan II	02	Min. 4 Mbps

b) From State Exit Point to central command centre

The bandwidth should be calculated keeping into consideration the following guidelines. It may change as per the design of the bidder:

Sl. No.	District	No. of State Exit Points	Bandwidth Requirement per exit point
1	Dehradun	4	Min. 4 Mbps
2	Haridwar	5	Min. 4 Mbps

3.6 Roadmap and Scalability

- Presently, the Mining Locations mentioned in the above section have been identified in the scope of the first phase of this project which may increase in future. Hence the solution provided should be scalable enough to accommodate future requirements.
- The tasks included in the scope should be designed and integrated in such a manner that they are easily scalable to induct future requirements.
- Availability of real time information and reports should be made available to all relevant stakeholders in the State.
- Software component in the integration plays a key role and should be able to serve role based access.
- The solution should have adequate hooks for seamless service delivery in future and to cater to various other important steps involved in completed and holistic transaction, viz. cashless transactions (post), registration of applicants (pre).
- Connectivity at the various site locations and central command centre will be the responsibility of the bidder with adequate support provided by the Govt.
- All civil and electrical infrastructure for the central command centre will be provided by the Govt. All permissions required for setting up of the infrastructure, including the cabling between the master and slave locations will have to be provided by the Govt.
- The bidder should agree to scaling up of the system beyond the scope of this RFP on mutually agreeable terms and conditions.

3.7 Maintenance Support

The project will be handed over to the department phase wise. All the equipments provided should have a 3 years warranty. At the time of handover all the assets of this project including equipment, hardware, software, licences etc will be transferred to the department. The warranty will also be passed on to the department at no extra charge.

Bidder would be required to maintain SLAs (as per chapter 5) upto 2 years after handover of the complete project.

Beyond the warranty period, department may enter into an AMC with the bidder on mutually agreed terms.

3.8 Quality Certification

The bidder will have to produce STQC certificate for the software which is developed for this project.

3.9 Application Hosting at Central Command Centre

The application developed as part of this project will be hosted at the Central Command Centre.

Chapter – 4: Solution Details

4.1 Design and Features of the Solution

The solution should be divided into following components:

- 1) Generation of Transit Passes electronically (MM-11 & Form 'J')
- 2) Surveillance System at mining sites and at state exit points (refer to Annexure – VIII& Annexure – X)
- 3) Central Command Centre (refer to Annexure – IX)

4.2 Generation of Transit Passes electronically (MM-11 & Form 'J')

The department intends to implement web application based and mobile application based electronic transit pass (MM-11& Form 'J') generation facility for all the registered miners of the state for all the sites and for all the crushing and storage sites across Uttarakhand. SMS integration and Payment Gateway integration should also be provided.

4.3 Surveillance System at mining sites and at state exit points

The solution should be based on a 'Master – Slave' Booth model. The system at each mining site will consist of One Master Booth and several Slave Booths connected to it using an optical fibre cable or any other appropriate connection. The surveillance system should also include a comprehensive Customizable MIS and application development solution.

4.3.1 Master and Slave Booths

Details of each of the Master and Slave Booths for the mining sites are given below.

Sl. No.	Description	Quantity	Units
A	Equipment for the permit issuance at all booths		
1	Tamper-proof Gen2 RFID sticker for vehicles	5000	No.
B	Equipment for Master Booth at mining locations		
1	Server hardware for managing IP camera for the mine including software applications for Number Plate Recognition, Challan system and Weighing scale integration software	1	No.

2	Router for connecting the setup over WAN to central command centre	1	No.
3	24 Port switch with 4 sfp uplink ports for connecting the various devices in the booth such as Booth mounted camera, Desktop workstation, Server, Printer, etc, with connectivity to the router	1	No.
4	IP CCTV camera for monitoring movement of vehicles	2	No.
5	IP CCTV camera for Number plate recognition with licensed software	2	No.
6	Indoor dome camera mounted inside the booth for monitoring the booth activities.	1	No.
7	Pan / Tilt / Zoom Camera for monitoring the activities in the mining area with connectivity to the booth	1	No.
8	Desktop with printer for running the complete automated system for issuing of various challans/ receipts	1	No.
9	Suitable power supply backup for running the complete system for 8 hours in the event of mains power failure.	1	No.
10	Portable weigh-bridge	2	lot
11	Porta cabin	1	lot
12	Boom Barrier with UHF RFID reader	2	lot
13	Customizable MIS & Application Development Solution	1	No.
14	Rack for router and switch	1	No.
C	Equipment for Slave Booth		
1	12 port switch. Switch for connecting the field equipment with dual uplink uplink capability to connect to the master booth.	1	No.
2	IP CCTV camera for monitoring movement of vehicles	2	No.
3	IP CCTV camera for Number plate recognition with licensed software	2	No.
4	Indoor dome camera mounted inside the booth for monitoring the booth activities.	1	No.
5	Pan / Tilt / Zoom Camera for monitoring the activities in the mining area with connectivity to the booth	1	No.
6	Desktop with printer for running the complete automated system for issuing of various challans/ receipts	1	No.

7	Suitable power supply backup for running the complete system for 8 hours in the event of mains power failure.	1	No.
8	Portable weigh-bridge	2	No.
9	Porta cabin	1	No.
10	Boom Barrier with UHF RFID Reader	2	No.
11	Customizable MIS & Application Development Solution	1	No.
12	Rack for switch	1	No.

Details of each of the state exit point booth are as given below.

Equipment for State Exit Point Booth			
1	Server hardware for managing IP camera for the mine including software applications for Number Plate Recognition, Challan system and Weighing scale integration software	1	No.
2	Router for connecting the setup over WAN to central command centre	1	No.
3	16 port manageable switch for connecting the various devices in the booth such as Booth mounted camera, Desktop workstation, Server, Printer, etc with connectivity to the router	1	No.
4	IP CCTV camera for monitoring movement of vehicles	2	No.
5	IP CCTV camera for Number plate recognition with licensed software	2	No.
6	Indoor dome camera mounted inside the booth for monitoring the booth activities.	1	No.
7	Desktop with printer for running the complete automated system for issuing of various challans/ receipts	1	No.
8	Suitable power supply backup for running the complete system for 8 hours in the event of mains power failure.	1	No.
9	Portable weigh-bridge	1	No.
10	Porta cabin	1	No.
11	Boom Barrier with UHF RFID reader	1	No.
12	Customizable MIS & Application Development Solution	1	No.

13	Rack for router and switch	1	No.
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Note:

- a) Technical specifications of cameras, central command centre router& switch, router at state exit point and at mining site, switch at state exit point and at mining site, portable cabins and portable weigh-bridges are mentioned in Annexure-XI.
- b) State exit points will contain master booth kind of setup.

4.3.2 Comprehensive Customizable MIS and application development solution

This is required for both master and slave booths. In view of the dynamic and changing requirements of Application Development, the solution should be preferably offered as a Platform with the following functionalities:

- Should be simple and capable of rapidly creating applications for the mobile and web platforms, or a combination of both, with minimal coding.
- Application can be modified / updated on the fly based on changing requirement.
- Should have functionality to define user queries, hierarchical views with privilege and ability to generate user defined custom reports and exception based reporting.
- Should have functionality for User Management – Access Rights, Hierarchy, Privileges.
- Capability to work on all Mobile Phone handsets, preferably without Internet and / or GPRS connectivity for applications created using the platform.
- Capable of speedy processing of Big Data to ensure high Performance.
- Ability to integrate with other systems based on File Web Services etc.
- Available on open source technologies so that the department need not incur any expenditure on software licenses.

4.4 Central Command Centre

The solution should have a Central Command Centre to receive and view all relevant data / information / images online in real time from various booths installed at sites to enable the department to take appropriate action in time. Details are mentioned in this section.

The space and electricity for central command centre will be provided by the department. Everything else required for central command centre will be provided by the bidder. This would include the power backup as well.

Detailed technical specifications for equipment should be mentioned in their proposals by the bidders. The following functionalities should be included in the offered solution:

4.4.1 Command and Control Operator Console

The solution will include a centralized control room solution for various mining sites in terms of monitoring & surveillance, incident & alarm management, report & trending as mentioned below:

a) A scalable Command and Control style Operator Console that supports the operation of the video surveillance management system and provide the following benefits:

- Improved scalability for large and geographically distributed environments.
- Complete view of facilities, sensors, and alarms in an easy-to-use and intuitive map-enabled graphical interface and
- A comprehensive security alarms/events management system with a powerful workflow and business logic engine.

b) Performance Requirements

- Collect and correlate events and alarms from single or multiple sub systems solutions
- Collect and correlate events and alarms from video management systems, access control systems and other intrusion detection systems
- Allow security incidents, complete with details and video from both server based management systems and endpoints/cameras.
- Display sensors and alarms on GIS enabled or regular maps
- Allow user to navigate maps in a hierarchical list or tree based security zones or logical groups
- Display live and archive videos, take snapshots and create video clips
- Control PTZ cameras, if available/deployed
- Video display in single windows or video matrix
- Capability to trace a suspect across multiple camera views using video EZ track
- Alarm display and alarm handling capability
- Capability to automate alarm correlation and actions
- Role based controls
- Password management and strong authentication
- Auditing and reporting
- Trend analysis

4.4.2 Video Surveillance Management (VSM) Software

The solution will be deployed at each location for optimized applications to view, store, and manage real-time and recorded video in a networked environment. The system shall use an open suite of URL-based programmatic interfaces to communicate with applications. The VSM should provide a highly scalable and reliable platform to enable customized, network-based surveillance applications.

Performance Requirements:

- Provide low latency video with high quality images
- Display live and recorded IP VIDEO camera feeds on multiple workstations simultaneously using a TCP/IP Ethernet network.
- Support thousands of simultaneous video feeds across multiple locations for centralized and decentralized storage, display, and distribution of video.
- Support multiple camera and encoder manufacturers within the same system.
- Support redundancy configurations including failover and complex high-availability scenarios
- The system shall provide replication of individual video feeds at different frame rates for multiple users and other system processes.
- The system shall support simultaneous video feeds across multiple locations for centralized and decentralized storage, display, and distribution of video without limitation, but shall minimize load on video servers by streaming only the active video channels.
- The system shall be capable of streaming and recording video at different bit rates and variable frame rates up to full motion 30 fps video on all IP VIDEO cameras feeds upto 1080P (1920x1080) camera resolution.
- The system shall provide diagnostic tools that support Simple Network Management Protocol (SNMP). Version 2.0 or higher and shall further provide notification & API support for failure of encoders, archives and proxies.
- The system shall provide for integration with other software applications through an open and published Application Programming Interface (API).Such applications shall include, but not be limited to, access control, video analytics, and other alarm and sensor inputs.
- The system shall support digital pan-tilt-zoom on live or archived video.
- The system shall provide the ability to remotely configure the IP VIDEO cameras and shall allow configuration data to be imported from a spreadsheet.
- The system shall allow instant replay of video and will permit pausing of live video, forward and backward review of recorded video, and return to live viewing.
- The system shall manage storage of real-time video at any specified frame rate, duration, and physical location on the network.

- The system shall provide flexible archiving capability in terms of frame rate, duration, and location and shall utilize dynamic file allocation to ensure that the full duration of the selected video stream will be recorded, regardless of lighting condition, motion, or scene detail. It shall support access to the archived video, to seek to any point in the archive, to set the pre and post time, and to loop that segment of the archive.
- The system shall show the status of CPU, Memory, Disk Usage, and traffic analysis.
- The system shall provide / creates reports on user activity, device configuration, run-time, and application log and event history.
- The system shall provide ability to create users, control their capabilities and integrate with LDAP
- ONVIF 2.0 Support

Video Surveillance Server Software shall be an intelligent digital video system that allows any operator or integrated application to control the video being displayed on any number of monitors, whether local and remote. It must include an API to allow a web application to control the delivery of video to any number of viewing stations running the matrix client software.

A command server must be able to connect to and display video streams from any media server. Operators shall be able to choose any number of available cameras to be displayed on any system monitors within any custom video display patterns. The video surveillance matrix server software shall be integrated with other systems to automatically display video in response to input triggers including access control systems, fire systems, motion sensors, and contact closures.

4.4.3 Operations Management

The Operations Management module shall provide the capability for multiple web-based display consoles to configure, manage, display, and control video throughout the IP network and include, as a minimum, health monitoring, support for the same interface for Administrative and Operations usage, ability to bulk import camera configurations, and Forensic Search. It must provide the ability to remotely create/burn/archive video.

Operator functionalities:

- Secure login
- Flexible video displays
- PTZ controls and presets
- Digital zoom and instant replay
- On-demand recording

- Video enhancements (adjusting brightness, color, transparency, etc.)
- Instantly swap between live and archive video of the same camera feed
- Archive review and clipping
- Event notifications

4.4.4 Client Viewing Software

Client Viewing Software shall allow an individual operator's PC to access and view video streams. The software shall have basic Archive Control functions for play back of JPEG, MPEG-2, and MPEG-4 archive files to include:

- play forward
- play backward
- pause
- step one frame forward
- step one frame backward

4.4.5 Equipment for Central Command Centre

Sl. No.	Description	Quantity	Units
1	Server hardware for Command and Control Centre, Software, E-Challan and Permit System Software, Number plate Recognition Software, Reporting and other applications required to complete the system	2	No.
2	Router for providing WAN connectivity	2	No.
3	16 PoE+ Port switch expandable to 24 Port switch for connecting various switches in the Central Command Centre	2	No.
4	MIS	1	No.
5	Command Control Setup - 4 LCD Screens + 4 Workstations	1	Lot
6	1 User Console Desk	4	No.
7	Central Customizable MIS & Application Development Solution Component	1	No.
8	Suitable power supply backup with hot standby for running the complete system in the event of mains power failure as per the SLAs defined in this document	1	No.
9	Rack for housing the server, router & switch	1	No.
10	Air-conditioning (2 ton) each	4	Nos.

Chapter – 5: Service Level Agreement and Penalty

5.1 SLA and Penalty

SLA is the contract between the Directorate of Industries and the selected Vendor. SLA defines the terms of the operator’s responsibility in ensuring the performance of the project based on the agreed Performance Indicators as detailed in the Agreement.

The table below summarizes the Indicative Performance Indicators for the services to be offered by the System Operator. The detailed description of the performance indicators, SLA Terms and their definitions are discussed in the following sections.

NOTE: SLA Defined in this section is INDICATIVE. The SLA Parameters at time of signing the Agreement with the Vendor will be finalized on the basis of the indicative SLAs mentioned under after finalization of the entire solution and its achievements.

Sl. No.	Indicative SLA Parameter	SLA Measurement	SLA Target (On Quarterly Basis)	Penalty
1.	Working of the installed Cameras	Uptime	99%	If not rectified/ replaced within 24 hrs from identifying the fault 0.1% of the order value
2.	RFID based Entry/Exit Authentication & Access Control System	Uptime	99%	0.1% of the order value
3.	Integration of Weigh bridge with Mineral Dispatch system	Uptime	99%	0.1% of the order value
4.	Centralized Management Information System	Uptime	99%	0.1% of the order value

5.	IT Infrastructure Provision (Hardware/Software/Network)	Uptime	99%	0.1% of the order value
6.	Bandwidth provisioning from service provider	Uptime	99%	0.1% Of the order value
7.	Power Back up	Uptime	99%	0.1% of the order value
8.	Availability of application	Uptime	99%	0.1% of the order value

5.2Service Support

5.2.1 Service Support Centre

The vendor is required to provide details of the Service Support Centre and Project Management Unit, which shall act as a SPOC (Single Point of Contact) for all the complaints, grievance etc. The support center should maintain 5 % spares at all times for all network and surveillance equipment (complete with accessories).

5.2.1 Measurement of SLA

The Measurement of SLA shall be performed by the department, independent of the vendor and the same shall be binding to the vendor.

ANNEXURE –I: Covering Letter of Bid

To:

< Location, Date >

< Name >

< Designation >

< Address >

< Phone Nos. >

< Fax Nos. >

< email id >

Subject: Submission of the bid for “Monitoring and Surveillance of Mining Operations”

Dear Sir/Madam,

We, the undersigned, offer to provide solution to the BUYER on “Monitoring and Surveillance of Mining Operations” with your Request for Bid dated < insert date > and our Bid. We are hereby submitting our Bid, which includes this Technical bid and the Commercial Bid sealed in a separate envelope.

We hereby declare that all the information and statements made in this Technical bid are true and accept that any misinterpretation contained in it may lead to our disqualification.

We undertake, if our Bid is accepted, to initiate the Implementation services related to the assignment not later than the date indicated in the RFP document.

We agree to abide by all the terms and conditions of the RFP document. We would hold the terms of our bid valid for 60 days as stipulated in the RFP document.

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

Yours sincerely,

Authorized Signature [*In full and initials*]: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

Location: _____ Date: _____

ANNEXURE – II: Company Profile

Company profile is to be submitted by the bidder in the following format. In case of consortia / JV it is to be submitted by all the participants.

Sl. No.	Information Sought	Details to be Furnished
A	Name and address of the bidding Company	
B	Incorporation status of the firm (public limited / private limited, etc.)	
C	Year of Establishment	
D	Date of registration	
E	ROC (Registrars of Companies) Reference No.	
F	Details of company registration	
G	Details of registration with appropriate authorities for service tax	
H	Name, Address, email, Phone nos. and Mobile Number of Contact Person (s)	

ANNEXURE – III: Bank Guarantee for EMD

To,

< Name >

< Designation >

< Address >

< Phone Nos. >

< Fax Nos. >

< email id >

Whereas << Name of the bidder >> (hereinafter called the Bidder) has submitted the bid for Submission of RFP # << RFP Number >> dated << Date >> for << Name of the assignment >>(hereinafter called "the Bid") to < the BUYER >

Know all Men by these presents that we <<>> having our office at << Address >> (hereinafter called "the Bank") are bound unto the < the BUYER > (hereinafter called "the Purchaser") in the sum of Rs. << Amount in figures >> (Rupees << Amount in words >> only) for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this << Date >>

The conditions of this obligation are:

- If the Bidder having its bid withdrawn during the period of bid validity specified by the Bidder on the Bid Form; or
- If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of validity of bid
 - Withdraws his participation from the bid during the period of validity of bid document; or
 - Fails or refuses to participate in the subsequent Tender process after having been short listed;

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its

demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to << insert date >> and including << extra time over and above mandated in the RFP >> from the last date of submission and any demand in respect thereof should reach the Bank not later than the above date.

NOTWITHSTANDING ANYTHING CONTAINED HEREIN:

- I. Our liability under this Bank Guarantee shall not exceed Rs. << Amount in figures >> (Rupees << Amount in words >> only)
- II. This Bank Guarantee shall be valid upto << *insert date* >>)
- III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this Bank Guarantee that we receive a valid written claim or demand for payment under this Bank Guarantee on or before << *insert date* >>) failing which our liability under the guarantee will automatically cease.

(Authorized Signatory of the Bank)

Seal:

Date:

ANNEXURE – IV: Performance Bank Guarantee

PERFORMANCE SECURITY:

< Name >

< Designation >

< Address >

< Phone Nos. >

< Fax Nos. >

< email id >

Whereas, << name of the supplier and address >>(hereinafter called “the bidder”) has undertaken, in pursuance of contract no. < Insert Contract No. > dated. < Date > to provide Implementation services for << name of the assignment >> to << name of the BUYER >> (hereinafter called “the beneficiary”)

And whereas it has been stipulated by in the said contract that the bidder shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with its obligations in accordance with the contract;

And whereas we, < **Name of Bank** > a banking company incorporated and having its head /registered office at < Address of Registered Office > and having one of its office at < Address of Local Office >have agreed to give the supplier such a bank guarantee.

Now, therefore, we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of **Rs.< Insert Value >(Rupees < Insert Value in Words > only)** and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of **Rs.< Insert Value >(Rupees< Insert Value in Words > only)** as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the bidder before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the Bidder shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This Guarantee shall be valid until << *Insert Date* >>)

Notwithstanding anything contained herein:

- I. Our liability under this bank guarantee shall not exceed **Rs.< Insert Value >(Rupees < Insert Value in Words > only).**
- II. This bank guarantee shall be valid up to < *Insert Expiry Date* >)
- III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this bank guarantee that we receive a valid written claim or demand for payment under this bank guarantee on or before < *Insert Expiry Date* >) failing which our liability under the guarantee will automatically cease.

ANNEXURE – V: Manufacturer’s Authorization Form

(This form has to be provided by the OEMs of the products proposed)

No. Date:

To:

Sub: OEM Authorization Letter

Dear Sir:

Ref: Your RFP Ref: [*] dated [*]

We who are established and reputable manufacturers / producers of _____ having factories / development facilities at (*address of factory / facility*) do hereby authorize M/s _____ (*Name and address of Agent*) to submit a Bid, and sign the contract with you against the above Bid Invitation.

We hereby extend our full guarantee and warranty for the Solution, Products and Services offered by the above firm against this Bid Invitation.

We also undertake to provide any or all of the following materials, notifications, and information pertaining to the Products manufactured or distributed by the Supplier:

- a. Such Products as you may opt to purchase from the Supplier, provided, that this option shall not relieve the Supplier of any warranty obligations under the Contract; and
- b. in the event of termination of production of such Products:
 - i. advance notification to you, of the pending termination, in sufficient time to permit you to procure needed requirements; and
 - ii. Following such termination, furnishing at no cost to you, the blueprints, design documents, operations manuals, standards, source codes and specifications of the Products, if requested.

We duly authorize the said firm to act on our behalf in fulfilling all installations, Technical support and maintenance obligations required by the contract.

Yours faithfully,

(Name)

(Name of Producers)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. The Bidder in its Bid should include it.

ANNEXURE - VI: TECHNICAL BID DETAILS
(Make and Model of each item)

For Central Command Centre

Sl. No.	Description	Make	Model	Quantity
1	Server hardware for Command and Control Centre, Software, E-Challan and Permit System Software, Number plate Recognition Software, Reporting and other applications required to complete the system			
2	Router for providing WAN connectivity			
3	16 PoE+ Port switch expandable to 24 Port switch for connecting various switches in the Central Command Centre			
4	MIS			
5	Command Control Setup - 4 LCD Screens + 4 Workstations			
6	1 User Console Desk			
7	Central Customizable MIS & Application Development Solution Component			
8	Suitable power supply backup with hot standby for running the complete system in the event of mains power failure as per the SLAs defined in this document			
9	Rack for housing server, router & switch			
10	Air-conditioning equipment			

For Mining Sites

Sl. No.	Description	Make	Model	Quantity
A	Equipment for the permit issuance at all booths			
1	Tamper-proof Gen2 RFID sticker for vehicles			
B	Equipment for Master Booth at mining locations			

1	Server hardware for managing IP camera for the mine including software applications for Number Plate Recognition, Challan system and Weighing scale integration software			
2	Router for connecting the setup over WAN to central command centre			
3	24 Port switch with 4 sfp uplink ports for connecting the various devices in the booth such as Booth mounted camera, Desktop workstation, Server, Printer, etc, with connectivity to the router			
4	IP CCTV camera for monitoring movement of vehicles			
5	IP CCTV camera for Number plate recognition with licensed software			
6	Indoor dome camera mounted inside the booth for monitoring the booth activities.			
7	Pan / Tilt / Zoom Camera for monitoring the activities in the mining area with connectivity to the booth			
8	Desktop with printer for running the complete automated system for issuing of various challans/ receipts			
9	Suitable power supply backup for running the complete system for 8 hours in the event of mains power failure.			
10	Portable weigh-bridge			
11	Porta cabin			
12	Boom Barrier with UHF RFID reader			
13	Customizable MIS & Application Development Solution			
14	Rack for router and switch			
C	Equipment for Slave Booth			
1	12 port switch. Switch for connecting the field equipment with dual uplink capability to connect to the master booth.			
2	IP CCTV camera for monitoring movement of vehicles			

3	IP CCTV camera for Number plate recognition with licensed software			
4	Indoor dome camera mounted inside the booth for monitoring the booth activities.			
5	Pan / Tilt / Zoom Camera for monitoring the activities in the mining area with connectivity to the booth			
6	Desktop with printer for running the complete automated system for issuing of various challans/ receipts			
7	Suitable power supply backup for running the complete system for 8 hours in the event of mains power failure.			
8	Portable weigh-bridge			
9	Porta cabin			
10	Boom Barrier with UHF RFID Reader			
11	Customizable MIS & Application Development Solution			
12	Rack for switch			

For State Exit Point Booth

Equipment for Master Booth at State Exit Point				
1	Server hardware for managing IP camera for the mine including software applications for Number Plate Recognition, Challan system and Weighing scale integration software			
2	Router for connecting the setup over WAN to central command centre			
3	16 Port Manageable Switch for connecting the various devices in the booth such as Booth mounted camera, Desktop workstation, Server, Printer, etc, with connectivity to the router			
4	IP CCTV camera for monitoring movement of vehicles			
5	IP CCTV camera for Number plate recognition with licensed software			
6	Indoor dome camera mounted inside the booth for monitoring the booth activities.			

7	Pan / Tilt / Zoom Camera for monitoring the activities in the mining area with connectivity to the booth			
8	Desktop with printer for running the complete automated system for issuing of various challans/ receipts			
9	Suitable power supply backup for running the complete system for 8 hours in the event of mains power failure.			
10	Portable weigh-bridge			
11	Porta cabin			
12	Boom Barrier with UHF RFID reader			
13	Customizable MIS & Application Development Solution			
14	Rack for router and switch			

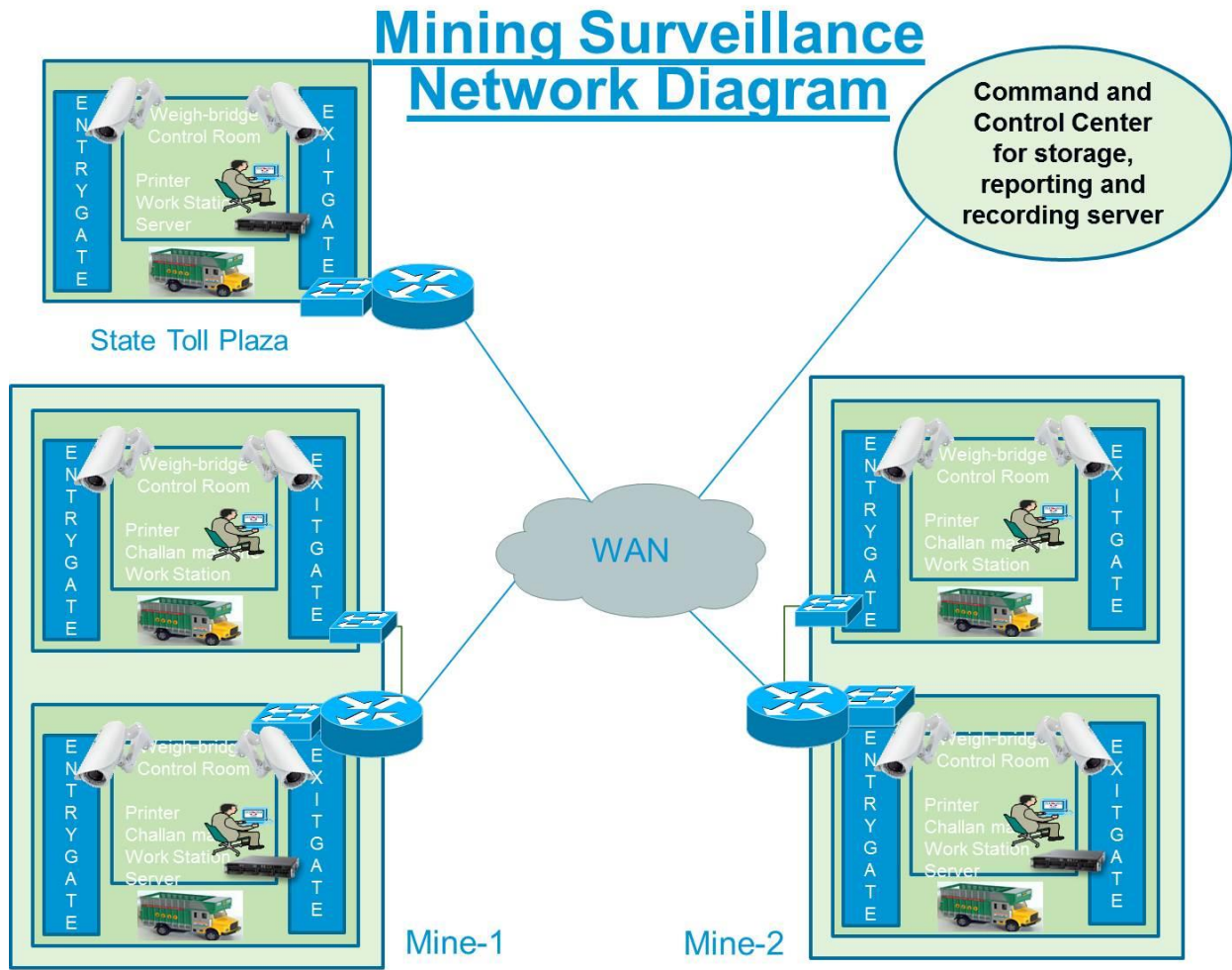
Note:

- a) The bidder is required to provide details of each and every item of the solution and may add more rows/columns to the above table for providing those details.
- b) Bidder should indicate licence period validity for each of the system software.
- c) Bidder should indicate warranty period for each of the items.

ANNEXURE - VII: COMMERCIAL BID DETAILS

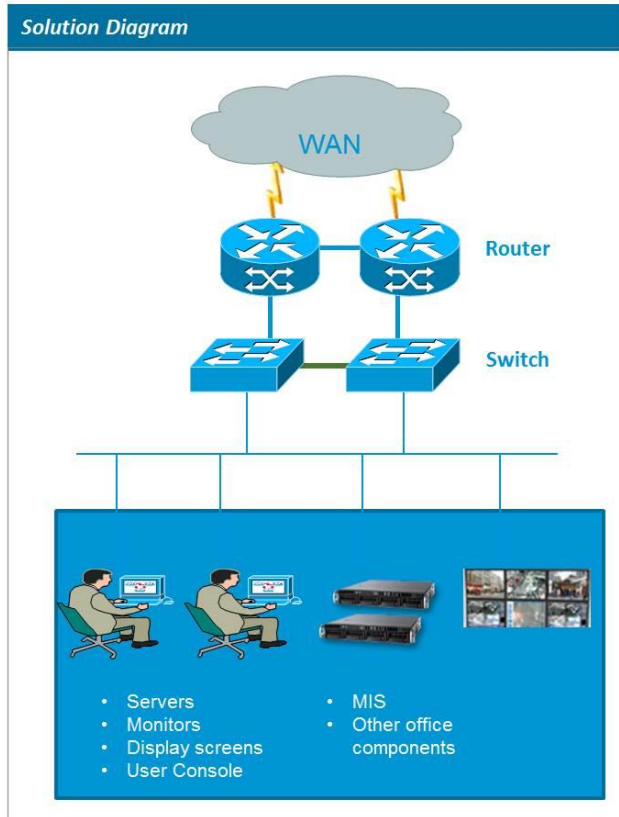
Sl. No.	Description	Unit Rate	Quantity	Total Cost (INR)
1	RFID sticker for vehicles			
2	Master Booth at mining locations along with all the necessary hardware, equipment, connectivity and recurring charges			
3	Slave Booth at mining locations along with all the necessary hardware, equipment, software and connectivity with master booth			
4	Central Command Centre along with all the necessary hardware, equipment, software, connectivity and recurring charges			
5	Booth at State Exit Points along with all the necessary hardware, equipment, software, connectivity and recurring charges			
GRAND TOTAL				

ANNEXURE – VIII: Mining Surveillance Network Diagram



ANNEXURE – IX: Central Command Centre

Command And Control Center



Connectivity Detail

- WAN connection will terminate on redundant high capacity routers in high availability in Command and Control Center.
- LAN Switches, in redundancy, will provide LAN connectivity to desktops, display screens, servers, console desk and other office end points
- Redundant servers for maximum availability of recorded data.

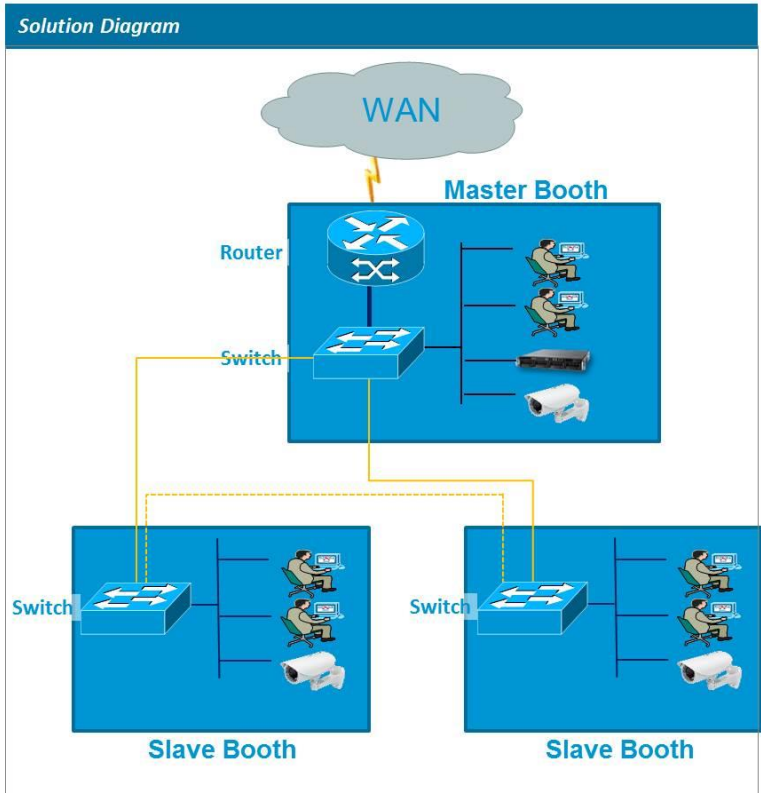


Solution Components

	System	Q'ty
1	Router	2
2	Switch	2
3	Server	2
4	MIS	1
5	Command Control Setup (4LCD + 4 Desktop)	2
6	Users Console Desk	4







ANNEXURE – X: Mining Booth

Mining Booth



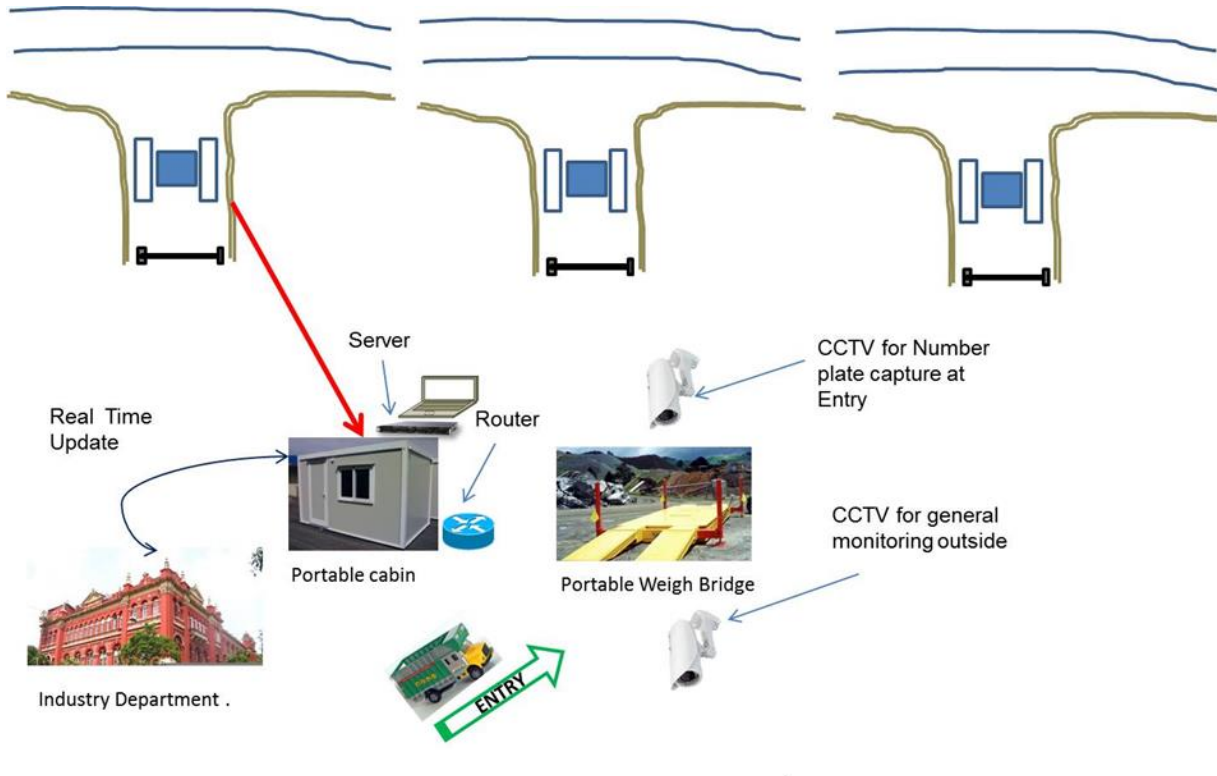
Connectivity Detail

- Every mining site will have gateway router for SP WAN connectivity at master booth.
- Master booth switch will connect to local end points and with slave booth.
- Gateway routers will connect to master booth switch and aggregated traffic will be forwarded to router through this link.
- Booth surveillance nodes, desktops, printers etc. will connect to local switch inside the booths.

 Copper Link  Router
 Fiber Link  Switch
 Server  Camera

Solution Components

	System	Q'ty
1	Router (Master Booth)	1
2	Switch (Master Booth)	2
3	Server (Master Booth)	1
4	Switch (Slave Booth)	1
5	Surveillance Camera (Master/ Slave)	6
6	Users Desk	1



ANNEXURE – XI: Technical Specifications

1) CAMERAS

a) Outdoor IP Camera at booth

The Video Surveillance IP Camera (IP Camera) should be able utilize multiple compression formats and must support wide dynamic range, embedded security and monitoring, event notification, provision for Power over Ethernet (PoE), and various mounting options. The camera shall provide outputs to support PAL analog video signal and an Internet Protocol (IP) packeted digital signal. The IP camera will contain a digital signal processor-based (DSP) unit, whereby embedded firmware determines its characteristics and performance and for which firmware can be upgraded over the network to correct, enhance or change its characteristics.

The system shall provide high-resolution, real-time video images, encapsulated in Internet Protocol (IP) packets and presented through a 10/100BASE-T RJ-45 Ethernet network connections. The system shall provide full HD video, 25 fps at 1920 x 1080 (PAL) and be configurable to 720p, D1, 4CIF, and CIF.

- Wide dynamic range (69 dB typical) using 1/2.7” or higher CMOS imager.
- Dual IP video streams, each capable of operating in unicast or multicast mode with quality of service (QoS) tagging.
- Automatic white balance (AWB), automatic gain control (AGC), automatic exposure shutter (AES), and auto and manual iris
- IEEE 802.1x Port-based security authentication and AES encryption.
- Activity detection and event notification.
- Ability to be upgraded over the IP network.
- Built-in IR illuminator with min 30 mtrs range.
- IP 66 Enclosure for outdoor monitoring.
- ONVIF 2.0 Support
- UL/EN Certified.
- Differentiated-services-code-point (DSCP) marking and class-of-service (CoS) marking.
- The system shall be capable of receiving firmware upgrades over the IP network.
- The camera shall be able to be configured to synchronize its internal date and time to a designated NTP server.
- Access to the camera through the network shall be controlled by two user levels of protection. Each level shall have its own configurable login

credentials and provide configurable privileges, which control access to camera features.

b) PTZ Camera

Besides all important standard camera features mentioned above, the PTZ cameras should allow for up to a 20x optical zoom while viewing and recording at 1080p resolutions. The cameras should come with integrated camera optics packages. They should offer 360° continuous pan rotation, as well as 16 PTZ presets. In addition, these cameras shall support an SD/SDHC slot for local storage that can be used in the case of loss network connectivity. PTZ IP Cameras should support two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, and bit rates or additional bandwidth administration. Cameras should feature a 1/2.8" or higher CCD for increased sensitivity, and low light technology that allows the cameras to compensate for scenes where minimal light is present. In addition, the cameras should have built-in motion detection and advanced wide dynamic range (WDR). The camera shall come in IP66 rating enclosure for outdoor application and shall have day/night operation.

c) Indoor Dome Cameras for Booth

Besides all important standard camera features mentioned above, the Indoor dome cameras should be capable of resolutions up to 1280 x 800 at 30 fps while optimizing network utilization with either H.264 or MJPEG compression.

2) NETWORK REQUIREMENTS

a) Central Command Centre Router

- Should have support for zone based firewall and IPS.
- Should have internal redundant power supply & it should support online insertion & removal for power supply.
- Should be EAL4 certified and OEM should be in leading position in Gartner magic quadrant for routing.
- The router should support temperature between 0-40 deg. C and 5-85% relative humidity.
- Router should have 4 inbuilt Gig ports
- Routers should have at least 4GB DRAM Routers should support Gigabit Ethernet and Fast Ethernet, Channelized E1 or E1, V.35/G.703 Serial.

- Should have hardware assisted acceleration for IPSec.
- The router should have a minimum performance of 2Mpps.
- Routers should have Class-based queuing, Voice traffic optimization with features like WRED, H-QoS, RSVP and priority queuing.
- Router should have protocols: RIPv1, RIPv2, OSPF, BGP, EIGRP, Policy based routing enabled for both IPV4 & IPV6.
- MPLS & IPSec VPN should work simultaneously
- IPv4 & IPV6 Multicast features- Router should support protocols: IGMP v1/v2/v3, IGMP Snooping, PIM-DM/SSM, PIM-SM, MLDV1,V2
- Should support extensive support for SLA monitoring for metrics like delay, latency, jitter, packet loss, RTP-Based VoIP traffic, CRTP
- Should have pre-planned scheduled reboot facility

b) Central Command Centre Switch

- Switch should have minimum 16 x 10/100/1000 PoE+ ports expandable to 24 and 4 combo GE 1G SFP
- Switch should support min 12 ports with IEEE 802.3at PoE+ standard.
- Switch should support Source-Guard, DHCP-Guard, and IPV6 security.
- Switch should support min 80Gig dedicated stacking and upto 8 switches in single stack.
- The switch should support temperature between -5 to 40 deg. C and 5-95% relative humidity.
- Should be in leading OEM position in Gartner magic quadrant for Switching
- Switch should have minimum 50 Gbps forwarding bandwidth capacity (Gbps) and minimum 71 Mpps of forwarding rate per switch
- Switch should have NTP feature RFC 1305
- It shall support Jumbo packets up to 9216-byte frame size to improve performance of large data transfers.
- Should support IEEE 802.1Q VLAN encapsulation and support for up to 4000 VLAN IDs simultaneously
- Switch should support L2 Trace route/ equivalent, link redundancy protocol, MSTP, RSTP
- It shall support private VLAN and VLAN Based & Port Based ACLs.
- Should have UDLD mechanism or equivalent to detect link failure detection uni-directional/ bi-directional, Per-port storm control for preventing broadcast, multicast, and unicast storms, dynamic ARP inspection
- It shall support IEEE 802.1p traffic prioritization & should have feature to automatically prioritize traffic based upon type of traffic (Auto Qos).
- Should Support for IGMP v1, v2 and v3, IGMP Snooping, MLD V1, V2, I capabilities

- Switch should support IEEE 802.1ae and 802.1x.
- It shall support SNMPv1/v2c/v3 & RMON.

c) State Exit Point & Mining Site (Master Booth) Router

- Should have support for zone based firewall, IPS, Content filtering features.
- Service module should support online insertion and removal.
- Should be EAL4 certified and OEM should be in leading position in Gartner magic quadrant for routing.
- Should support operating temperature between 0-40C for altitude 5900 ft or higher & 0-25 for altitude 9800 ft or higher and 10 – 85 % relative humidity.
- Router should have 6 Gig port including 4 PoE enabled.
- Routers should have at least 512 DRAM 256 MB Flash.
- Routers should support Gigabit Ethernet and Fast Ethernet, Channelized E1 or E1, V.35/G.703 Serial, 3G Wireless (Both HSPA and CDMA) interface modules (for WAN backup).
- Should have hardware assisted acceleration for both IPSec and SSL VPN.
- The router should have a minimum performance of 330 Kpps
- Routers should have Class-based queuing, Voice traffic optimization with features like WRED, H-QoS, RSVP and priority queuing.
- Router should have protocols: VRRP, Static Routes, RIPv1, RIPv2, OSPF, BGP, EIGRP Policy based routing enabled, for both IPV4 & IPV6.
- MPLS & IPSec VPN should work simultaneously
- Router should support protocols: IGMP v1/v2/v3, IGMP Snooping, PIM-DM/SSM, PIM-SM, MLDV1,V2
- Should support extensive support for SLA monitoring for metrics like delay, latency, jitter, packet loss, RTP-Based VoIP traffic, CRTP
- Should have pre-planned scheduled reboot facility

d) Mining Site (Master Booth) Switch

- Switch should have minimum 24 x 10/100/1000 PoE+ ports and 4 combo GE 1G SFP
- Switch should support min 12 ports with IEEE 802.3at PoE+ standard.
- Switch should support Source-Guard, DHCP-Guard, and IPV6 security.
- Switch should support min 80Gig dedicated stacking and upto 8 switches in single stack.
- Should be in leading OEM position in Gartner magic quadrant for Switching

- Should support Operating Temperature between -5 to 45C and relative humidity between 5-95%
- Switch should have minimum 50 Gbps forwarding bandwidth capacity (Gbps) and minimum 71 Mpps of forwarding rate per switch
- Switch should have NTP feature RFC 1305
- It shall support Jumbo packets up to 9216-byte frame size to improve performance of large data transfers.
- Should support IEEE 802.1Q VLAN encapsulation and support for up to 4000 VLAN IDs simultaneously
- Switch should support L2 Trace route/ equivalent, link redundancy protocol, MSTP, RSTP
- It shall support private VLAN and VLAN Based & Port Based ACLs.
- Should have UDLD mechanism or equivalent to detect link failure detection uni-directional/ bi-directional, Per-port storm control for preventing broadcast, multicast, and unicast storms, dynamic ARP inspection
- It shall support IEEE 802.1p traffic prioritization & should have feature to automatically prioritize traffic based upon type of traffic (Auto Qos).
- Should Support for IGMP v1, v2 and v3, IGMP Snooping, MLD V1, V2, I capabilities
- Switch should support IEEE 802.1ae and 802.1x.
- It shall support SNMPv1/v2c/v3 & RMON.

e) Slave Booth Switch

- Switch should have minimum 12 x 10/100 Fast Ethernet PoE ports and 2 combo GE 1G SFP
- Switch should support Source-Guard, DHCP-Guard, and IPV6 security.
- Should be in leading OEM position in Gartner magic quadrant for Switching
- Should support Operating Temperature between -5 to 45C and relative humidity between 5-95%
- Switch should have minimum 10 Gbps forwarding bandwidth capacity (Gbps) and minimum 4.6 Mpps of forwarding rate per switch
- Switch should have NTP feature RFC 1305
- Switch should support minimum 4000 MAC address per switch
- It shall support Jumbo packets up to 9018-byte frame size to improve performance of large data transfers.
- Should support IEEE 802.1Q VLAN encapsulation and support for up to 4000 VLAN IDs simultaneously
- Switch should support L2 Trace route/ equivalent, link redundancy protocol, MSTP, RSTP

- It shall support private VLAN and VLAN Based & Port Based ACLs.
- Should have UDLD mechanism or equivalent to detect link failure detection uni-directional/ by-directional, Per-port storm control for preventing broadcast, multicast, and unicast storms, dynamic ARP inspection
- It shall support IEEE 802.1p traffic prioritization & should have feature to automatically prioritize traffic based upon type of traffic (Auto Qos).
- Should Support for IGMP v1, v2 and v3, IGMP Snooping, MLD V1, V2, I capabilities
- Switch should support IEEE 802.1ae and 802.1x
- It shall support SNMPv1/v2c/v3 & RMON.
- Router and Switch should be from same OEM.

f) Recording Server

- Each server shall have a minimum of two (2) Intel E5-2600 series CPUs and supports the Intel E5-2690 2.90 GHz 135 W CPU
- The server should have up to 12 front-accessible, hot-swappable, SAS or SATA drives
- The Server RAID controller should support the following configurations RAID 0, 1, 5, 6, 10, 50, and 60
- Should support a write cache of 1 GB for the storage controller
- Support for a battery back write cache for the storage controller
- Must have an internal slot for SD card / Flash which supports booting hypervisors
- Should have at least 24 DIMM slots for up to 768 GB of DDR3 memory using 32 GB DIMMs
- Support for advanced memory redundant technologies like Advanced error-correcting code (ECC) and memory mirroring
- Should have 4 * 1 GbE LAN on Motherboard (LOM) for network connectivity
- The server should support the technology of 10-Gbps unified network fabric which aggregates both the Ethernet and FC connectivity on a single controller using Low-latency, lossless, 10-Gbps Ethernet and industry-standard Fibre Channel over Ethernet
- (FCoE) fabric
- Each server should offer 5 PCI Express (PCIe) 3.0 slots
- 2 * 16x both full height, one half length & the other 3/4 length
- 2 * 8x both full-height and one is half-length
- 1 * 8x half height half length
- The integrated management controller should support web user interface for server management; remote keyboard, video, and mouse

(KVM); virtual media; and administration with Virtual media support for remote KVM and CD and DVD drives as if local

- The server should support Intelligent Platform Management Interface (IPMI) 2.0 support for out-of-band management
- Through third-party enterprise management systems
- The server should support Command-line interface (CLI) for server management
- Should have the following ports for server connectivity:
 - 1 serial port
 - 2 USB ports
 - 1 VGA video port
- Supports hot swappable redundant fans
- Supports hot swappable redundant power supplies
- Operating Temperature support from 41 to 104°F (5 to 40°C) and Non-operating Temperature from -40 to 149°F (-40 to 65°C)
- Operating Humidity from 10 to 90% noncondensing
- Operating Altitude from 0 to 10,000 ft (0 to 3000m) or higher and Non-operating Altitude upto 40,000 ft (12,000m) or higher
- Server should be from same OEM who is providing network infrastructure for better integration and compatibility.

g) NMS

The network and surveillance components should be managed by network management solution which is to be provided by the bidder.

h) Desktop

Feature	Required Parameters
Processor	Intel core i-3 or equivalent or better
Speed	Min 2.0 Ghz, 4 MB Cache or better
Chipset	Intel or equivalent
System Memory	Min 2 GB RAM Expandable to 16 GB
Hard Disk Option	1 x 500 GB SATA
Optical Drive	DVD +/- R/W (Latest Speed)
Keyboard	USB
Mouse	Optical USB
Cabinet	Tower
Monitor	19" LCD
Power Supply	230VAC/50 Hz
Operating System	Latest version of Windows (Compatible to Access Control & Surveillance System)

Ports	8 External USB 2.0 ,1 VGA, 1 RJ45,1HDMI
Connectivity	100/1000 Ethernet
Make	Reputed

i) Printer

Print speed, black	20 ppm or more
Print resolution, black	1200 x 600 x 2 dpi or more
Print technology	Laser
Monthly duty cycle	6000 pages or more
Memory, standard	24 MB or higher
Print languages, standard	Host-based printing, PCL 5e
Duplex printing (printing on both sides of paper)	Automatic (standard)
Media sizes, standard	A4 , letter
Media sizes, custom	250-sheet input tray: 5.8 x 8.27 to 8.5 x 14 in; priority feed slot: 3 x 5 to 8.5 x 14 in preferable
Network ready	Standard (built-in Ethernet)

j) State Exit Point Booth Switch

- Manageable Switch
- Switch should have 10/100/1000 16 ports

3) Portable Cabins (10' x 10' x 8.6')

Sl. No.	Requirements
1	Structure 100 mm x 50 mm C channel, cross member of 75 mm x 40 mm on which 18 mm marine ply mounted with vinyl flooring
2	Roof Top outer curved type of G. I. 18 SWG plane sheet welded with M. S. Frame structure. Top inner decorated with 9mm thick laminated board
3	Cage Structure & Wall Panel MS frame work with square pipe & wall thickness 50 mm
4	Outer Wall G.I. 18 SWG bended sheet welded on M.S frame
5	Internal Wall 9 mm thick laminated board (MDF)

6	Door Frame work by 40 mm x 40 mm square pipe external wall made by G.I. sheet & inner wall decorated by 9 mm laminated board and suitable locking arrangement.
7	Insulation All void within the external wall & inner wall are filled with 50 mm Glass wool which posses' rare combination like lower thermal conductivity & high resistance to moisture & heat.
8	Window 3'x3' Window shall be aluminium double shutter sliding type, with black powder coating & grill, glass shall be clear or dark float glass.
9	Electric All electric wiring is concealed & modular switch and socket with fan & tube lights above door one bulkhead.
10	Paint All components are primed with two coats of epoxy paints
11	Legs 5 inch height, Four legs at all four corners
12	Hooks Specially formed Hooks for Easy lifting and Shifting
13	Fittings 1 Fan, 2 Tube lights, 1 Window with grill, 1 Door, 2 5 Amp Switch, 1 Bulb Head, 1 A/C, 1 Switch 15 Amp

4) Portable Weigh-bridge

Sl. No.	Requirements
1	Capacity: 2 Axle Trucks – 20 to 30 Tons and 3 to 4 Axle Trucks - 40 to 60 Tons
2	Platform Size: 6 X 3 Meters and 9 X 3 Meters
3	Accuracy: 5 Kgs
4	No. of Load Cells: 6, 4
5	Type of Load Cell: Double ended shear beam
6	Load Cell Protection: IP-68
7	Operating Voltage: 230 V Single Phase
8	Load Cell Sensitivity: 2mV/V

9	Maximum Load Cell Output: 20m V
10	Load Cell Excitation: 10V dc
11	Safe Over Load: 200%
12	Ultimate Over Load: 300%
13	Insulation Resistance: Above 1000M Ω @ 30 Vdc
14	<p>Digitizer</p> <ul style="list-style-type: none"> • Range: 60,000 Counts • Excitation Output: 10v dc to Load Cell • Display: 5 Digit, 13mm, 7segment LED • Operation Voltage: 230V, 50HZ, Single Phase, AC • Operation Temperature: 5 to 55 Deg. C • Input: mV from Load Cell • Outputs: <ul style="list-style-type: none"> i) RS232C ii) BCD output for Outdoor Display • Programmable features: <ul style="list-style-type: none"> i) Resolution ii) Over-range iii) Decimal Point iv) Zero limit v) Calibration vi) Time Constant vii) Tare viii) System re-set • Security: Combination of Password & Hardware lock

5) Boom Barrier

- Blocking width: Barrier Boom Length should be in size i.e., 4000 mm
- Height of the boom from ground: 884 and 914 mm +/- 50 mm
- Opening & Closing Time: 2 to 6 sec
- Operating Voltage: 230 V AC 50Hz
- Motor Power supply: 24 V D. C
- Control Unit: Intensive use
- Operating Temperature Range: 0 to +55° C
- Height: not less than 1 000 mm and 1050 mm
- Boom shall be made of white painted Aluminium Bar with red adhesive refracting strips for bars
- Housing: The control unit shall be housed in weather proof housing with at least IP 54 Protection for easy maintenance
- The Boom Barrier should smoothly open and close without bounce/jerks at end positions
- Operation: Stand alone with push Button switch and also shall be integrated with Access Control system

- Safety: Loop detector to be provided to prevent barriers from closing on the vehicles
- Version: Shall be available in Left -Hand and right-hand version with provision of interchangeable from left -hand version to right hand version and vice versa at site
- Power: It should have a durable motor for long lasting purpose and it should not generate less than 200 Nm torque
- Control panel should have the feature for attaching safety and other command device
- It should have an inbuilt obstacle detection function for maximum safety
- Barrier must be CE certified
- Accessories:
 - (a) Mobile Boom Bar Stand to ensure steadiness
 - (b) Photocells for safety
 - (c) Flash light should be directly fitted on the barrier body
 - (d) Impact resistant protective rubber

6) UHF RFID Reader

- Communication mode : Dynamically encrypted mode
- Read Range : upto 10 meters
- Communication protocol : Weigand, RS232, RS 422, RS 485
- Antenna polarizing : Circular polarized
- External inputs : 2
- External outputs : 2
- Ethernet compatibility : Yes
- Tag buffering : Yes
- LED indication : Yes
- Temperature : -25°C to +60°C
- Humidity : 80-90% non-condensing
- Protection : Weather proof
- Mounting : Pedestal, pole, wall or ceiling mounted