Engineering Data Management System

INDEX

BHARAT HEAVY ELECTRICALS LIMITED

BHEL JHANSI

Notice Inviting Tender (NIT)

Tender Notification No. : PUR/E-7490098 dated:03.06.09

Tender Due Date : 17.07.2009 (Revised)

1. This is Notice Inviting Tender for tender notification No. **PUR/E-7490098 dated:03.06.09** for the development and supply of required software and hardware for "Engineering Data Management System"

2. Bidders shall read carefully the enclosed documents that comprise this Tender:
   - Section I-: Terms and Conditions
   - Section II: Technical Specifications.

3. The offers shall be in accordance with Terms and Conditions and Technical Specifications enclosed. Deviations, if any, shall be clearly indicated. Bids not in conformity with the Terms and Conditions and Technical Specifications and/or are not in the prescribed format will not be considered and are liable to be rejected. Bids with deviations may be rejected.

4. The fact of submission of tender implies that the Bidder has actually inspected the site and examined all the requirements relating to execution of the contract.

5. The Bidders shall bear all costs associated with the preparation and submission of the bid. BHEL shall in no case be liable for these costs regardless of the conduct or outcome of the process.

6. Pre-bid meeting shall be called (15) days prior to Tender due date i.e. on **15.06.2009.**

7. The offers should be in two-part bid (i.e., Part-I: Technical bid and Part-II: Price bid).

8. Sealed Tenders shall be addressed to the "Head(MM), BHEL Khailar, JHANSI(UP), Pin:284129" and the envelope shall be superscribed with Tender Notification Number & stamp of the Bidder and the Tender due date.

9. The sealed tenders will be received by us at his office at 30.06.2009 up to 13:15 hrs on the tender due date. The technical bid (i.e., Part-I of the offer) will be opened on 30.06.2009 at 14:00 hrs in presence of the Bidders or their authorized representatives who choose to be present.

10. During the course of finalization of Tender and Award of Contract, the Bidder shall promptly and completely respond to all clarifications sought by the undersigned and attend any meeting on the date and time called by us with written intimation to the Bidder.

11. At any time prior to the Tender due date, BHEL may, at its sole discretion or in response to a clarification sought by a Bidder, modify the bidding documents. For compliance of the requirements by the Bidder owing to the change, BHEL may, at its sole discretion change the Tender due date.

12. BHEL reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract without assigning any reason therefore.

Mailing Address:

opsingh@bheljhs.co.in

BHARAT HEAVY ELECTRICALS LIMITED

UNIT NAME: BHEL JHANSI

Tender Notification No.:PUR/E-7490098 Dated : 03.06.2009.

SECTION-I

TERMS & CONDITIONS

1. Instructions

1.1 TWO-PART BID:

1.1.1 The offer shall be submitted in a sealed envelope which would contain two separate sealed envelopes as (i) Technical Bid and (ii) Price Bid.

1.1.2 The Technical bid, in English, shall contain (i) separate sealed envelope Tender cost; (ii) confirmation of compliance to all terms & conditions; (iii) technical offer in detail for the entire scope of work as given in the Technical Specification: (iv) Assumptions / Deviations in format as per Annexure-D and (v) Price schedule (without prices).

The technical proposal shall cover, but not be limited to, the following:

a) Clear understanding of complete scope of work and deliverables with respect to product information and automation requirements given.
b) Development methodology and all software programs / packages required to be used for the development of the software module.
c) Proposed work schedule with duration so that total duration of the project does not exceed specified delivery period.
d) Clear understanding of the working modalities. Bidder should indicate manpower proposed to be deployed at BHEL for this project.
e) Assumptions / deviations with respect to the technical specs, if any, and expected technical inputs from BHEL team during the project execution.

1.1.3 The price bid shall consist of the Price Schedule format with prices filled in (see ANNEXURE-B). Bidder shall indicate prices for all the items indicated in the Price Schedule. In addition, the total price of the contract shall also be clearly indicated. All prices should be firm for the duration of the contract. All applicable duties and taxes shall be clearly indicated in the offer. The tariff rates as applicable on the date of bid shall be specified. Wording like "Extra as applicable", etc., will not be acceptable.

1.2 Each sealed envelope shall be superscribed with the type of bid (Technical or Price), Tender Notification number and Bidder's name, stamp & signature. Both these envelopes should be submitted through one covering letter in a sealed envelope super scribing the Tender Notification number and bidder's name, stamp & signature.

1.3 The sealed Bids shall be submitted on or before the time & date specified and shall be addressed to the official as mentioned in the Notice Inviting Tender. Tenders received after the due date and time of opening are liable to be rejected. Tenders received through e-mail / fax will not be considered.

1.4 Bidder shall fill up all the schedules and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the Tender Specification shall be SIGNED, STAMPED AND SUBMITTED ALONGWITH THE OFFER by the Bidder in token of complete acceptance thereof. The information furnished shall be complete in itself.

1.5 The Bidder shall quote the PRICES in English Language and international numerals. These rates shall be entered in figures as well as in words. In case of difference in rates between words and figures, THE LESSER OF THE TWO will be treated as valid for the purpose of the tender. In case of difference in (i) sum of the items and (ii) total indicated, the former will be considered. The metric system of units shall be used.

1.6 All entries in the tender shall either be typed or be written in ink. Erasures and overwriting are not permitted and may render such tenders liable to rejection. The Bidder shall duly attest all cancellations and insertions.

1.7 Conditional and unsigned tenders, tenders containing absurd or unworkable rates and amounts, tenders which are incomplete or otherwise considered defective and tenders not in accordance with the tender conditions, specifications, etc., are liable to be rejected.

1.8 Tenders shall be signed by persons duly authorized / empowered to do so. Certified copies of such authority and relevant documents shall be submitted along with the tenders. The Declaration (see ANNEXURE-A) shall be signed by the duly authorized person.

1.9 In the event of the Bidder merging with or getting acquired by another company, all obligations under the contract shall automatically get transferred to the acquiring company till the end of the period, including the guarantee period and AMC, if opted for.

Bidder shall intimate BHEL if there is any change in their legal status, within fifteen days of such change. BHEL shall review the implications and take necessary action.

1.10 Bidders are required to comply with the provisions of all existing Acts, Statutes, Rules, Notifications and Regulations of both Central and State governments as the case may be. If necessary, Bidders shall get themselves duly registered in compliance with such Acts, Statutes, Rules, etc., before Price Bid opening.

1.11 Should a Bidder or, in the case of a Firm or Company, its Partner(s) / major Shareholder(s)/ Director(s) have relation(s) employed in BHEL, the authority inviting tender shall be informed of the fact along with the offer. Otherwise, BHEL may, at its sole discretion, reject the tender or cancel the contract at any stage of the contract.

1.12 Any attempt by a Bidder to exert influence on BHEL during the process of bid evaluation or award of the contract, would make their bid liable for rejection.

2. Scope of Tender

2.1 This tender is for design, development, supply, installation, testing and demonstration of the software modules as per the requirements identified by BHEL in the enclosed Technical Specification (Section-II).

2.2 The bidder shall identify areas in which their solutions conform to open standards and areas that are proprietary in nature. Justification about proprietary components in terms of functionality, up-gradability and performance shall be given.

2.3 All the necessary hardware required to carry out the work shall be arranged by the Bidder.

2.4 All the necessary software (including licences for development packages) required to carry out the work shall be arranged by the Bidder.

2.5 All expenses towards logistics and incidentals, including lodging, boarding, travel, etc., incurred in connection with the execution of this contract shall be borne by the Bidder and shall not be reimbursed by BHEL. However accommodation at BHEL Jhansi Guesthouse can be provided based on availability on chargeable basis. In case of availability in BHEL guesthouse, it is preferred to stay in BHEL guesthouse to reduce travel time from Jhansi to BHEL.

2.6 The Bidder shall post an adequate number of qualified and experienced personnel to execute the contract. The list of personnel proposed to be deployed shall be submitted as part of the technical proposal, by name and title.

2.7 Except as BHEL may otherwise agree, no changes shall be made in the key manpower. If, for any reason beyond the reasonable control of the Bidder, it becomes necessary to replace any of the key manpower, the bidder shall provide as a replacement a person of equivalent or better qualifications and experience, subject to approval of BHEL.

2.8 In case of Technical clarification bidder may contact directly to Engineering Division, Head(TRE), BHEL Khailar, Jhansi(UP) Pin:284129, email: arkuls@bheljhs.co.in or Dy Mgr(TRE) email: akhatloiya@bheljhs.co.in

3. Pre-Bid Clarifications

3.1 The Bidder shall closely peruse all the clauses, specifications and drawings indicated in the Tender Documents before submission of their bid. Any clarifications on the tender specifications can be sought from the authority inviting the tender, before the last date of submission of the tender.

4. Validity of Offer and Evaluation

4.1 The offer shall be kept open for acceptance for a period of 180 days from the date of opening of Technical Bid. Only the Technical Bid will be opened on the due date mentioned in the enquiry.

4.2 Bidders shall not be permitted to make changes in their Technical or Price bids after bid submission, unless asked to do so by BHEL. Unsolicited clarifications are liable to be rejected.

4.3 In case of minor changes in scope and/ or technical specifications or commercial terms, having price implications, technically accepted Bidders shall be asked to submit their revised Price Bids in line with the revised scope and terms & conditions.

4.4 Bidder shall comply, entire Qualifying mandatory requirement. ***[Refer Clause 14].*** Bids not confirming the above are liable to be rejected.

4.5 Price Bids of only the qualified and technically acceptable Bidders will be opened.

4.6 Prices should be quoted on FOR Jhansi basis inclusive Packing & Forwarding charges, Freight charges etc.

4.7 In case BHEL calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer, which shall be binding, on the Bidder. All expenses for attending such negotiations are to be borne by the Bidder.

4.8 The total price for entire scope of work, together with taxes and duties (but excluding ED, Service Tax and VAT if applicable), and AMC for five years will be considered for bid evaluation purposes (i.e. the Net cost to BHEL on FOR Jhansi basis). ***[Refer Para 8.2 for AMC]***

4.9 Offer will be evaluated based on AMC charges. However, order will be placed without AMC. But AMC price should be valid for 5 years after guarantee period.

4.10 The entire work covered in this Tender shall be entrusted to a **single Bidder.** The successful Bidder is not permitted to off load part or whole of the work to a sub vendor except Computer Hardware, without the prior written consent of BHEL.

4.11 The successful Bidder shall attend the office of the Official as mentioned in the Notice Inviting Tender on the date fixed by the Official through a written intimation. The Bidder shall forthwith accept award of the contract and complete the execution of the agreement by signing all documents connected therewith.

5. Security Deposit (SD) cum Performance Bank Guarantee (PBG)

5.1. Security deposit (SD) cum Performance Bank Guarantee (PBG) for 10% basic value of the order (excluding taxes & duties) for execution of the purchase order (PO) & satisfactory Performance of the equipment up to Warrantee period of 12 months with a further claim period of 3 months. This BG is to be submitted within 15 days of issue of LOI and PO will be released after receipt of this BG only. In case of failure of its submission within 15 days, we may cancel the order. The SD cum PBG shall be submitted as per proforma given in attached file. The BGs shall be established through a nationalised bank in India acceptable to the Purchaser. Co operative Bank guarantee is not acceptable to us. All charges for establishing and amending the BGs, if necessary, shall be to Vendor's account. After issue of LOI, we will be having this BG of 10% value covering delivery period, execution and warranty period of 12 months from acceptance date.

5.2. SD shall be forfeited if the contract is abandoned by the bidder during the contract period.

5.3. SD shall not bear any interest in any manner whatsoever.

6. Intellectual Property Rights

6.1. Bidder shall treat all information that is generated in connection with this assignment as absolutely confidential. All information, analysis, reports and recommendations, both in the form of hard copy or on electronic media, will be the property of BHEL and is prohibited from being used by the Bidder for any purpose other than this assignment. All Bidders are required to sign non-disclosure agreement with BHEL. On award of the contract, all employees, associates and affiliates of the Bidder assigned to and working on the development work are required to sign BHEL's '3rd Party Non-Disclosure Agreement' as given in Annexure-C.

6.2. Bidder shall indemnify BHEL against any copyright or legal liabilities that may arise in use of the developed software or the methodology / models / techniques used by the Bidder in development / implementation of the software module.

6.3. In the event that the services provided by Bidder in connection with software programmes and related documentation supplied to BHEL in relation to which rights may be owned by third parties, Bidder shall warrant and represent that:

6.3.1. BHEL has all necessary permissions, express or otherwise, to enable the software programmes and documentation to be copied or otherwise used by Bidder during the course of the services without infringing any third party copyright, patent or trade secret;

6.3.2. In providing the services Bidder shall not be infringing upon the intellectual property rights of any third parties;

6.3.3. The disclosures or use of the software programmes and documentation during the course of services shall not involve the breach of any confidential or contractual relationship.

6.4. All source code as well as other deliverables generated under this work shall become the sole property of BHEL.

7. Completion of Contract

7.1 The Bidder shall meet the acceptance criteria within a delivery period of **09 Months** from the date of award of contract in strict adherence to the time schedule prescribed during award of the contract.

7.2 The Bidder shall use all reasonable care and skill in providing the services and shall be responsible for the quality of workmanship and accuracy of the deliverables to the satisfaction of BHEL. Bidder shall implement in-house quality control and shall carry out 100% quality checks prior to submitting to BHEL for acceptance.

7.3 The Contract shall be considered successfully completed upon acceptance by the BHEL Project Leader of deliverables as specified in the contract. The BHEL Project Leader shall effect the sign-off along with the Bidder for closing the contract.

7.4 Bidder shall adhere to the material movement and security procedures of BHEL.

7.5 Bidder shall not utilize services of BHEL employees for carrying out contract jobs in any manner whatsoever. In case of any breach of this condition, the contract shall be terminated forthwith without any prior notice, or assigning any reason at the sole discretion of BHEL.

7.6 The obligation stipulated in this specification can only be suspended in the case of any particular item of work, in the event of Force Majeure or as the result of an agreement between the parties. In the event of Force Majeure, neither of the parties may be considered in default of its obligations under the terms of this tender.

Force Majeure is hereby defined as any cause which is beyond the control of the Bidder or BHEL, as the case may be, which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the contract, such as:

- Natural phenomena including, but not limited to, floods, droughts, earthquakes and epidemics;

- Acts of any government, domestic or foreign, including, but not limited to, war, declared or undeclared, priorities, quarantines, embargoes; provided either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such cause.

7.7 BHEL has the right to terminate the contract after due notice and forfeit the Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages/ penalty in the event of:

(a) Bidder's continued poor progress.

(b) Withdrawal from or abandonment of the work before completion of the work.

(c) Corrupt act of the bidder.

(d) Insolvency of the bidder.

(e) Persistent disregard of the instructions of BHEL.

(f) Assignment, transfer, subletting of the contract work without BHEL's written permission.

(g) Non-fulfillment of any contractual obligations.

8. Warrantee Period & Annual Maintenance Charges

8.1 The developed software and Hardware shall have warranty for trouble-free operation for a period of twelve (12) months **after the acceptance of complete solution**. In case of any defects observed during the operation of this module during this period, the Bidder shall render their services without any additional cost for repair / rectification of the same within the time as prescribed by BHEL.

8.2 Bidder shall quote AMC charges valid for a period of five (5) years after the 12 months warrantee period in the price schedule. The AMC shall commence after expiry of warrantee period.

8.3 Bidder shall have one point contact for any supply, support/services required in Hardware and Software solution during the stage of development, warrantee and AMC.

9. Terms of Payment

9.1 No Advance Payments will be made.

9.2 Payment shall be made after certification issued by BHEL Project Leader regarding the satisfactory completion of scope of work as per the payment schedule enumerated hereunder. However, lump-sum payment at the completion of the contract can also be considered if the Bidder so desires.

9.2.1 100% of Hardware, Software, implementation and data migration charges (Sr no 1 to 3 of schedule price) after final acceptance.

9.2.2 Training Charges (Sr no 4 of schedule price): 100% after successful completion.

9.2.3 10 Months Onsite Support (Sr no 5 of schedule price): 100% Payment after completion of 10 months.

9.2.4 Yearly AMC Charges for five years after Warrantee Period (Sr no 6 of schedule price): Quarterly payment after completion of each quarter.

9.3 Bidder shall submit the invoices to BHEL Project Leader within ten (10) days from the date of successful completion of milestones.

9.4 After final acceptance, Bidder shall be required to furnish performance bank guarantee equal to 10% of the contract value, to be valid for the duration of the warrantee period (12 months). The final payment will be released only after submission of the performance bank guarantee.

9.5 Payments to Bidders will be subject to deduction of taxes at source as per prevailing laws.

9.6 Bidders shall continue to have full liability to meet the complete requirements and rectify any defects till the completion of the contract, notwithstanding any part payments that may have been made for any part of the work.

9.7 In case there is an increase in scope of work after the award of contract on account of BHEL, an additional payment, up to a maximum of 10% of the contract value, at BHEL's sole discretion, can be made to Bidders. Payment for additional work, if any, will be made after completion of contract and final acceptance. Bidders shall quote, as part of the price schedule, man month and man day charges at which the additional work will be evaluated.

9.8 Service Tax, if any, shall be payable extra as applicable from time to time. It shall be claimed separately to enable BHEL to avail credit of it.

9.9 In case the government (Centre/ State) imposes any new taxes/ duties on the output services/ work after the award of contract, the same shall be reimbursed by BHEL at actuals. All necessary documents as required by BHEL shall have to be provided by the Bidder. However, in the event of delay in work execution attributable to the Bidder, the new taxes/ duties imposed during the delay period shall not be reimbursed to the Bidder. BHEL's decision in this regard shall be final.

10.9.1 In case any taxes/ levies are imposed after submission of Bidder's offer, the Bidder shall convey its impact on the price, duly substantiated by documentary evidence, before opening the Price Bid. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

10. Penalty Clause

10.1 Penalty @ 0.5% per week or part thereof, subject to a maximum of 10% of the order value, shall be levied for the late delivery/ execution of the job as per certification of the BHEL Project Leader.

10.2 The penalty shall be evaluated only at the time of final delivery and not during the stages of individual milestones, if any.

10.3 DEDUCTION FOR DOWNTIME

Downtime calculation for the supplied equipment & services

Vendor shall be responsible for running the system at the uptime of 98% per month or higher. The deduction for downtime will be as mentioned below.

Deduction from payments will be made for non-availability of Computer system during the entire Warrantee or AMC period. In case downtime is during Warrantee period than amount will be deducted from Bank Guarantee.

Downtime calculation for Computer system
In case of non availability of the system due to either software or hardware, the vendor will be informed immediately and the vendor is expected to set right the system within 24Hours. After 24 hours of reporting of problem, if the system is not set right then for every 4 hours deduction of one day of AMC charge will be made.

Any equipment/ part down for more than 5% time cumulative in a quarter has to be replaced.

At the end of the contract period if any computer system equipment is found down, final payment for the contract will be made only after system is made up.

Downtime calculation will be applicable for non-availability of Computer system services arising because of malfunctioning of either Software, Servers, switches, UPS etc.

Note:

If the uptime for equipment falls below 98% continuously for 1 month, the equipment shall have to be replaced by the Vendor, without any extra charge.

11. Reverse Auction (RA)

11.1. BHEL may go for Reverse Auction (on line bidding on Internet) instead of opening the submitted sealed price bid. The decision to go for Reverse Auction will be taken after techno-commercial evaluation. Information and general terms and conditions governing RA are given below.

11.2. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.

11.3. BHEL will engage the services of a Service Provider who will provide all necessary training and assistance/ demonstration before commencement of on line bidding on internet.

11.4. BHEL will inform the Vendors in writing the details of Service Provider to enable them to contact for training/ demonstration.

11.5. Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through Service Provider for compliance.

11.6. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse Auction. Without this, the vendor will not be eligible to participate in the event.

11.7. BHEL will provide the calculation sheet which will help the Vendors to arrive at "Total Cost to BHEL" by including items like Packing & Forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL Commercial terms & conditions, if any) for each of the Vendors to enable them to fill-in the price and keep it ready for keying in during the Auction.

11.8. Reverse auction will be conducted on a scheduled date & time.

11.9. At the end of Reverse Auction event, the lowest bid value will be known on the network.

11.10. The lowest bidder has to fax the duly signed filled-in prescribed format as provided to BHEL through Service Provider within 24 hours of Auction without fail.

11.11. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.

11.12. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids already submitted and available with BHEL shall be opened as per BHEL's standard practice.

12. Acceptance Criteria of complete solution:

12.1. Successful supply & installation of Hardware including UPS.

12.2. Successful Integration of Hardware with existing network of BHEL.

12.3. Supply of Software licenses.

12.4. Successful installation and implementation of customized software.

12.5. Integration with BHEL Oracle system.

12.6. Testing of the solution.

12.7. BOM/Drawing data migration.

12.8. 3 WorkOrders as Test cases to demonstrate following functionalities as mentioned in technical specification

- Drawing Storage and access control
- BOM entry and integration with BHEL BOM database
- Drawing approval and revision control
- Printing of Documents
- Generation of Reports
- Searching of Documents

13. Arbitration and Jurisdiction:

13.1. In the event of any question of dispute or difference arising or in connection with the terms of the contract, the same shall, after a written notice to the other party, be referred to the sole arbitration of Head of Unit BHEL Jhansi or any other person (including an employee of BHEL, even though he had to deal with the matter relating to this agreement in any manner) nominated by the said Head of Unit, BHEL Jhansi to act as sole arbitrator.

The Arbitration shall be conducted and governed in accordance with the provisions of Indian Arbitration and Conciliation Act 1996 or rules framed there under. The award of the arbitrator shall be final and binding on both the parties to the contract.

13.2. The venue of arbitration shall be at BHEL, Jhansi and courts at Jhansi shall have jurisdiction.

13.3. The contract shall be governed by the Laws of India.

14. QUALIFYING REQUIREMENTS:

S.No.	Requirements	Evaluation Criteria	Compliance Yes/No
1	The bidder must be the owner of the Software Package (Attach documentary proof) or Authorized Partner for selling and implementation of Software Package used for the Solution. In case the bidder is a Partner of the Software Manufacturer, a Certificate from the Software Manufacturer clearly stating the relationship with the Partner and authorization to the Partner to quote for this specific tender is to be furnished.	Mandatory	
2	Bidder should have experience of successful execution of similar projects in India during last 3 years from tender due date, of at least two projects each costing 20 Lakhs and above, for software and implementation. (Attach documentary proof)	Mandatory	
3	The bidder should have average turnover of minimum 1.25 crores per annum in past 3 years from tender due date. (Attach Audited annual accounts).	Mandatory	
4	The bidder should have a technical assistance center in India and the bidder must have office and hardware service center within 500 km from Jhansi with engineers qualified to support the complete project. (Attach documentary proof).	Mandatory	

BHARAT HEAVY ELECTRICALS LIMITED

UNIT NAME: BHEL JHANSI

Tender No. : Error! Reference source not found.

ANNEXURE-A

DECLARATION

I/We, _____hereby certify that, all the information and data furnished by me with regard to this Tender Notification **Error! Reference source not found.** dated **Error! Reference source not found.** are true and complete to the best of my knowledge. I have gone through the specification, conditions and stipulations in detail and agree to comply with the requirements and intent of specification.

I/We, further certify that I am / we are the duly authorized representative(s) of the under mentioned tenderer and a valid power of attorney to this effect is also enclosed.

I/We, hereby declare that I/We shall treat the tender documents, drawings, specifications and other records connected with the work as secret/confidential and shall not communicate information / derived there from to any persons other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the same.

Bidder's Name & Address Name & Signature
of the Bidder (Seal)

ANNEXURE B

BHARAT HEAVY ELECTRICALS LIMITED

UNIT NAME: BHEL JHANSI

Tender Notification No.: Error! Reference source not found. **Dated** Error! Reference source not found.

SCHEDULE OF PRICES

SR. NO.	DESCRIPTION	QTY	PRICE (Indian Rupees)	APPLICABE DUTIES (%) (ED/ CST/ Service Tax)	TOTAL PRICE	REMARKS
1.	Application Software Price + Operating System + Database with one year ATS including Software interface to Oracle10G database					
2.	Software Development / Implementation Charges + BOM/Drawing Data Migration					
3.	Hardware Price					
4.	Training Charges					
5.	10 Months Onsite Support					
6.	Yearly AMC Charges for five years after Warrantee Period					
7.	Total					
8.	Total (In words)					
Optional Items (not applicable for price bid evaluation)						
9.	Software charge of 1 license (If there is an increase in license requirement)					
	3D CAD user license	1				
	2D CAD user license	1				
	Non CAD user license	1				

Note: Price for optional items shall be valid for at least one year after acceptance of complete solution.

Bidder's Name & Address

Signature & Office Seal of the Bidder

BHARAT HEAVY ELECTRICALS LIMITED

UNIT NAME: BHEL JHANSI

Tender Notification No. :**Error! Reference source not found.** Dated **Error! Reference source not found.**

ANNEXURE-C

THIRD PARTY NON-DISCLOSURE AGREEMENT

I, , on behalf of the (Name of Company), acknowledge that the information received or generated, directly or indirectly, while working with BHEL on contract is confidential and that the nature of the business of the BHEL is such that the following conditions are reasonable, and therefore:

I warrant and agree as follows:

I, or any other personnel employed or engaged by our company, agree not to disclose, directly or indirectly, any information related to the BHEL. Without restricting the generality of the foregoing, it is agreed that we will not disclose such information consisting but not necessarily limited to:

- Technical information: Methods, drawings, processes, formulae, compositions, systems, techniques, inventions, computer programs/data/configuration and research projects.
- Business information: Customer lists, project schedules, pricing data, estimates, financial or marketing data,

On conclusion of contract, I, or any other personnel employed or engaged by our company shall return to BHEL all documents and property of BHEL, including but not necessarily limited to: drawings, blueprints, reports, manuals, computer programs/data/configuration, and all other materials and all copies thereof relating in any way to BHEL' s business, or in any way obtained by me during the course of contract. I further agree that I, or any others employed or engaged by our company shall not retain copies, notes or abstracts of the foregoing.

This obligation of confidence shall continue after the conclusion of the contract also.

I acknowledge that the aforesaid restrictions are necessary and fundamental to the business of the BHEL, and are reasonable given the nature of the business carried on by the BHEL. I agree that this agreement shall be governed by and construed in accordance with the laws of country.

I enter into this agreement totally voluntarily, with full knowledge of its meaning, and without duress.

Dated at _____ , this _____ day of _____ , 20 ____ .

NAME SIGNATURE DATE SEAL OF COMPANY

ANNEXURE D

ASSUMPTIONS / DEVIATIONS

Company Name: Sheet No:

Contact no:

Date:

Sr No	Tender Specification Clause No & Page No	Remarks	Assumptions / Deviation

BHARAT HEAVY ELECTRICALS LIMITED

UNIT NAME: BHEL JHANSI

Tender Notification No.: Error! Reference source not found. **Dated** Error! Reference source not found.

SECTION-II

TECHNICAL SPECIFICATION

1. INTENT OF SPECIFICATION

BHEL Jhansi is looking for complete automation of Engineering Data Management (PDM), Change Management with customizable Work flow and Bill of Material Management. The software should be capable of being handled by ITI trained people and can be integrated with **ERP** in future.

2. INTRODUCTION ABOUT BHEL

Bharat Heavy Electricals Ltd. (BHEL) is a premier Govt of India undertaking and ranks among the top ten power generation equipment manufacturers in the world. BHEL manufactured and supplied (aprox.) 70% of power generation equipment in India.

BHEL is manufacturing and marketing a wide range of products with the Involvement of its different units at different stages, particularly Jhansi products which are primarily marketed by Industry Sector and Regional Operations.

3. PRODUCT DESCRIPTION

BHEL Jhansi is having two Main Products i.e. Transformers and Locomotives Engineering. BHEL Jhansi is also under development of many new products. BHEL Jhansi is presently developing WAG7 electric loco and AC EMU coaches for Indian Railways and has developed DE Shunters in the range of 350 hp to 1400 hp, various other utility vehicles including Rail cum Road Vehicle, Battery Powered Road Vehicle, dynamic track stabilizer, ballast cleaning machine, Hoist assembly for ship lift system etc. BHEL has also done many enhancements in existing products like eye bolt CT, Aluminum foil cast resin Dry type Transformer, 132 KV Live Tank CT, 400KV CT Design, StepLap Core and many more.

4. OBJECTIVES OF THE PROPOSED "ENGINEERING DATA MANAGEMENT SYSTEM"

4.1. Eliminate data loss
4.2. Manage Data Security
4.3. Increase Productivity
4.4. Reduce errors by Automating processes and driving conformity on corporate standards
4.5. Improve Quality Standards
4.6. Greater Team Work & Control
4.7. Efficient Review
4.8. Increase design reuse
4.9. Improve Planning
4.10. Reduce repeated errors
4.11. Improve Services
4.12. Eliminate manual handoffs by workflow automation
4.13. Effective revision and version control
4.14. Audit trail for maintaining accountability
4.15. Change Management
4.16. Search & Reuse

5. FLEXIBILITY AND USER FRIENDLINESS OF THE SYSTEM

User-friendly system so that it can be easily used by ITI trained people at shop floor. For further assistance following things are also required:

5.1. Help buttons

5.2. Pop up messages, warnings

5.3. Proper training

6. SCOPE:

6.1. To supply a software package for Automation of Drawing and Data Management, Change Management, Engineering Processes and BOM etc.

6.2. Supply and installation of computer Hardware (Rack mounted Servers, network switch etc) as mentioned in clause 9.0.

6.3. Installation of application software in 2 servers that are in hardware cluster mode (so that in case of failure of one server another server will be active).

6.4. Supply of RDMS and its installation in above 2 servers.

6.5. Testing of the customized software at each stage.

6.6. Implementation / Handholding of the customized software.

6.7. Methodology for Uploading Scanned Drawings.

6.8. Migration of BOM / Drawing database.

6.9. Training and user manual.

6.10. Single person Post Implementation onsite Support for 10 months.

Bidder may include anything else required for the development of & adding value to the package.

Note: - Development work may be done offsite but BHEL require that intermediate reviews, implementation and testing as may be required, be done onsite.

7. ESTIMATED WORK SCHEDULE

7.1. System Design and Project Plan

7.2. Development of software program including configuration, graphic user interfaces, database, reference libraries, and interfaces to other software like Oracle, MS Office as required.

7.3. Installation of Computer Hardware / Servers with OS and RDBMS.

7.4. Installation of developed software module on supplied Servers.

7.5. Periodic testing of development with participation of BHEL team

7.6. Preparation of System Documentation and User Manuals

7.7. Implementation

7.8. Training to BHEL users and system administrator

7.9. Final acceptance testing of installed system by BHEL

Estimated Total duration of project including implementation – nine months

8. SUGGESTED SOFTWARE PROGRAMS / PACKAGES TO BE USED

Software	-	Product Data Management Software
Data bases	-	RDBMS
Front end Display	-	Web Browse
Operating System Client	-	Windows XP Professional/Vista (32/64 bit version)

9. COMPUTER HARDWARE

Sr No	Item	Qty	Minimum Configuration
1	Server with Hardware Cluster for (Application, RDBMS) with Mounting Rack(42U) and KVM Switch	2 Nos	2 Way, Dual core Xeon 3.0 GHz, 2 Nos Processors, 6GB DDR2-667 SDRAM with Advanced ECC, 5 X 73 GB 3G SAS 10K SFF SP HDD, 10/100/1000/2GB Ethernet Card 3Nos (2 on Board & one on PCI Slot), Smart array 400 controller with 256 MBB Cache (RAID 0/1/5) / Hot Plug, DVD Writer, Management Softwares
2	Test Server for testing of (Application, RDBMS)	1 No	Core to Duo, 2GB RAM, 160GB SATA HDD
3	Network L2 Switch	1 No	2GBPS, (24 Ports)
4	**Double conversion** true Online UPS (10 KVA)		DSP controlled for protection from spikes and surge. LCD display for monitoring I/P and O/P. Input power correction. Output power factor 0.8 and SMF battery with min 1/2 Hrs Power Backup at full load.
5	Operating System	2 Nos	*(For 2 Nos Servers)*
6	Operating System	1 Nos	*(For Test Server)*

9.1. Supply and installation of Computer Hardware is in the scope of successful bidder.

9.2. The Hardware supply and integration should be from **established hardware system integrator** only.

9.3. The 2 no servers mentioned above shall be in **hardware cluster mode**. One of these two servers will be in active mode. In case of failure of active server another server will become active. The application software and the RDMS software should be able to run in these servers and no additional license shall be required for the secondary server.

9.4. The above hardware requirement is not limited. Bidder may increase the hardware quantity or configuration depending upon the application software requirement for the smooth functioning of system. Quantity and configuration lower than mentioned above is not permitted.

9.5. Before quoting the bid, bidder shall visit BHEL Jhansi to understand the requirement of Computer Hardware. These hardware are required to be integrated with BHEL IT systems and RDBMS.

9.6. Existing Computer Hardware setup in BHEL IT department is one year old and was installed / commissioned from WIPRO and is also under AMC with WIPRO.

9.7. These hardware should be capable to work continuously 24X7 hours without any interruption.

9.8. The developed module shall be installed on supplied servers and its satisfactory operation shall be demonstrated.

9.9. BHEL IT department is having SAN and Tap Autoloader for data storage and backup. Currently it is being used for the storage of data of IT Business application. The same storage and backup device shall be used for Engineering data.

9.10. All BHEL Jhansi IT systems (Servers, PC, Printers) are connected through 100MBPS Network.

9.11. SAN and Application Servers will be installed in different physical locations. The application servers will be installed in Engineering division. It will be connected through existing network to SAN via network switch.

10. DELIVERABLES

10.1. Application Software Licenses

10.2. Computer Hardware (Servers, switch etc)

10.3. RDMS Software licenses

10.4. CDs with Source Code – 5 Copies

10.5. User manuals (Soft Copy) – 5 Copies

10.6. User manuals (Hard Copy) – 10 Copies

11. PROCESSES:

The processes of following departments are given below to understand BHEL basic functions:

11.1. **Commercial Department:**

BHEL gets offers & specifications via commercial department from BHEL Business Sectors / Marketing Groups viz. Power Sector, Industry Sector, Regional Operations and International Operations or directly from Customer. Every tender enquiry bear unique no allotted by Product Commercial. On receipt of tender enquiry/document, product commercial refers relevant portions of customer specifications to the respective Engineering/PPC etc. as necessary to ascertain that the customer requirements are adequately defined and can be met. For any clarification it is sought through commercial from concern Business Sector or directly from customer.

After getting the offer from Commercial, Engineering prepares technical offer comprising of the following documents:

- Technical specification,
- Scope of supply,
- Performance and guarantee particulars,
- Weights & dimensions of dispatchable units, wherever necessary,
- Copies of type test schedules wherever required,
- Tender drawings/ literature, as applicable
- Tender Estimates
- Schedule of comments on and deviations from the tender specifications.

Commercial department prepare the commercial part and submit the complete tender to concerned marketing group. After receive of customer order commercial allot 11 digit Work Order (WO) no and release WO Part I, II, III to Engineering, Manufacturing, Finance and Other concern department to start the manufacturing and design activities and book the cost to WO number. Commercial also assign Serial no to each product of the WO (i.e. Job Serial No). The Inspection call for final testing of equipment is given by the Commercial Department, based on

the advice of the Manufacturing Department. The calls for stage inspection in case of customers who have local Inspection offices are given by OC&A department.

On Customer PO receipt, Commercial takes clarifications / Interpretation of different clauses with Engineering, Production, OC and others as necessary. Regulatory requirements prevalent in the country / location of use as specified by the customer, particularly for export jobs, is seen by Engineering to ensure that capability for compliance exists in our products. Engineering and Commercial study the PO to list out variations from the tender/specifications, and Commercial shall take up the same for resolution with the customer. Wherever applicable, Engineering prepares a drawing submission schedule for customer's approval. Schedule shall be used by Commercial for periodical monitoring of drawing submission and for expediting approval. Wherever contractually required total contract price is divided into different dispatchable units and furnished to customer for approval before dispatches become due. Necessary test requirements are finalised and listed by Engineering, and get approved from the customer at the contracting stage by Commercial. Product QC prepare QPs indicating CHPs (Customer Hold Points) in consultation with Engineering; and Commercial submits to customer for approval where required. Variations with the approved QPs shall be identified and highlighted to respective departments by Product QC. Commercial shall study all aspects of the contract and prepare a monitoring Checklist. All deviations are approved by Engineering. Likewise shortages are listed by Production, certified by QC and sent to Commercial for approval.

In some tender customer asks for approval of vendor of supplied items from them. These can be bought out items, Sub-Contract item or Material directly to Site. The product sale forward the customer need for BHEL vendor list to CQX. The concerned product engineering group decides the name of the vendors to be given to Customer. If some customer desires, in addition to name of vendor “vendor facilities” in their format, then commercial arrange blank format from customer & handed over to CQX. CQX forward it to MM and filled up by concerned vendors. Some customers also want Vendor Evaluation Report in their format. In some cases customer may like to visit the vendors. In such case concerned MM group organize the visit. The list of vendors approved by customer is maintained by CQX. Product Engineering and PPC ensures to issue Purchase Indent of items in Customer approved vendor list. Regular monitoring is done by CQX.

Key performance indicators are Order Booking, Time for release of work order from receipt of customer's order/ internal order, Timely Delivery - Delivery of item/ equipment with respect to work order delivery/project schedules, Bill verification - After receipt of material at destination, monitoring to be done with respect to outstanding and Cash Collection.

11.2. **FES:**

For erection and commissioning services, after getting customer order commercial issue a WO and follow with External Service Department (ESX).

For customer complaints regarding short supplies, product defect, deviation from milestones etc Nodal Agency at Jhansi is Project Monitoring Group (PMG). PMG maintain the register having information in a giving format and acknowledge receipt of complaint to customer within 2 days. The complaint after registration is forwarded to the concern commercial department for verification and further action. At commercial department the complaint is checked for correctness and validity of warrantee period. Commercial Group initiate action with the help of Engineering / Field Service department for complaint resolution, estimation of time, identification, of material to be sent and deputation of person for attending the complaint. The Commercial department keeps track of progress of the resolution. Once action plan is drawn, the same is intimated to customer by commercial department. FES department examines the gravity of the technical nature of complaints like critical, major & minor and does the investigation by concern department / appointing special task force/ concern

PPC for short delivery. This investigation includes analysis of problem based on manufacturing/testing data, past data on similar type of Transformer and also do root cause Analysis. The concerned Commercial Group prepares monthly statement of pending complaints and organise review meeting with all concerned department namely Engineering, Field Engineering, Manufacturing, Quality, CDC and any other department as and when required. In case complaint is not attended within 3 month of receipt, the same is referred to PQC by commercial for giving thrust to liquidate the complaint. FES department gives feedback to commercial department about status of the complaint. If complaint is resolved, cause of the complaint is also mentioned for complaint closure by commercial. The complaint is closed by the commercial department after receiving closing report along with cause from the FES, Engineering Head, General Manager depending on the type of complaint. Quality department reports monthly status of major customer's complaints to Corporate Quality.

Following reports are generated by product commercial department.

- Status of Customer complaints
- Time taken for disposition / resolution
- Cause with break up of customer complaint
- Brief Discussion of complaints received in months
- Status of implementation of corrective action

To handle non -conformities at site during material receipt, Erection and commissioning at site BHEL is having systems like SAR (Site Action Request), CAR (Commissioning Action Request) and MDR (Material Discrepancy Report). SAR is raised by site and forwarded to QA of concern unit. CAR is forwarded to FES/Engineering for disposition and MDR is forwarded to unit commercial for disposal within 10 Days.

11.3. **Engineering**

As specified earlier that Product Engineering prepares the technical offer and Estimate for the proposal received by Commercial department. After receipt of Customer Order this technical documents works as an input for subsequent design activity by engineering.

After receipt of Order, Product engineering records detail of Order like date of receipt, WO no, customer name, product description, quantity, pertinent design inputs, earliest delivery and section to whom this order assigned.

Contract specifications & Work Orders are studied, compared with tender specification particularly with reference to the deviations asked & agreed by the customer and checked by design engineer for its completeness. Any ambiguity and inadequacy is informed to the Commercial. Pertinent design inputs are identified and documented by each Product Engineering Department. Equipment being designed, manufactured and delivered is compared with contract specifications at appropriate stages of design. Deviations due to improved design, manufacturing technology and process etc. or due to any plant limitations are informed by Engineering to Commercial for taking up with the customer appropriately. Due care is taken in design itself to meet customer contract requirements of inspection & testing and adherence to QA plan as detailed by quality department for the contract. Design group also takes into account during the design stage the transport limitations consultation with Central Dispatch Cell for the products involving transport of heavy/ over dimension consignments. Customer drawings are prepared by design groups and submitted to customer through Commercial for approval. Responsibility of timely approval is of Commercial.

Product Engineering issues documents i.e. drawings, Bill Of Material(BOM) specifications, MI Sheet, shipping list, assembly and test instructions items , operation & maintenance manuals etc. required for executing a contract. Engineering does the Indents for Direct Chargeable materials. For development / design of the Product, designer considers the

Site Requirement, transport and handling limitation, regulatory compliance and inspection and testing requirement. For transport limitation, engineering consult with Central Dispatch Cell (CDC) for the product involving heavy / over dimension consignments. Customer drawings are prepared by design groups and submitted to Customer through Commercial for approval.

Two types of tests are conducted for any Product i.e. Routine test and Type Test. Routine tests are conducted on all products of one WO and Type test is conducted on only one product of that WO. Product Engineering takes the approval of Test schedule from the Customer. In proposal customer specify the test required in there specification. In general for proven/similar designs, only routine tests are conducted at final assembly. And for new designs, type/ special tests are conducted at subassembly and/or assembly stages under defined operating conditions. Test results are scrutinized / approved by the concerned design group in-charge.

Engineering issues Operation and Maintenance manual after issue of all engineering information. It has Supplier specification of the Bought out items that are used in the product, Workshop manual, daily maintenance schedule and monthly maintenance schedule.

Engineering release documents as per agreed plan for production / customer / site. In case of products developed/manufactured with collaboration/consultancy, drawings/ documents as received from the collaborator/consultant other sources are used till BHEL's equivalents are evolved. After preparation of design document, it is checked to ensure the fulfillment of contract requirement, codes, standard interfacing / matching aspects, notes, adherence to drawing office practices and the like. After checking it is approved to see economic design, manufacturing feasibility, site feedback, safety, reliability and fulfillment of engineering procedures. Engineering document such as Assembly/OGA/component drg etc are approved by designed contract engineers as authorized by Head of Engineering. MI sheet and shipping list are approved by a person not less than Draftsman Grade I. Drawing is released at appropriate numbering scheme.

Products are manufactured as per design documents. However, as a process of continuous improvement design changes do occur and have to be incorporated. The changes may be due to one or more of the following reason:

- Process capability;
- Test bed feedback;
- Site feedback;
- Specific contract requirements:
- Technological changes;
- Design review/verification feedback;
- Production feedback.

All requests for design modifications are raised in the specified format “design modification request (DMR)” and sent to the respective product engineering Head. Request for change are based on process capability and technological changes. Manufacturing & technological changes are routed through Technology. Any modification under suggestion scheme is also raised through design modification request (DMR) by the accepting agency. Engineering head contract engineer records observations whether DMR deserves consideration or not. Based on necessity, severity and urgency of the need for a design change, engineering Head appoints a design change group consisting of members from many departments. Design change group go through all aspects of the proposed change and adopt any one or more of the following for evaluation:

- Rechecking/ vetting of design calculations or alternative calculations methods of independent agency.
- Model Testing

- Prototype Testing / Certification to relevant company / national/ International -standards.
- Comparison with proven design.
- Computer simulation studies.
- Extended shop test.
- Safety aspects during manufacture, transport, site handling and use.

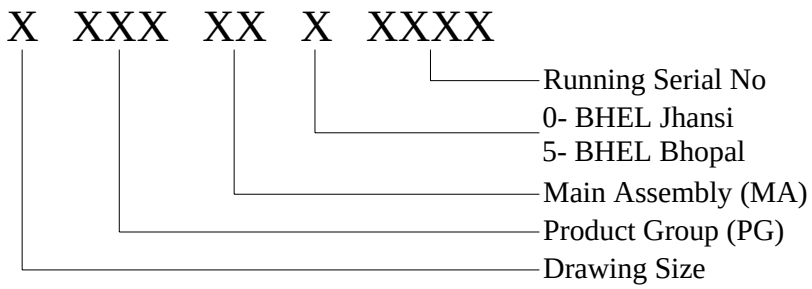
After completing the activating as above, the leader of the design change group submits a report to head of engineering recommending the action proposed with agencies responsible for implementation. Head of Engineering based on the result of tests/ recommendations shall approve the changes and fix up time for its implementation. The revision of documents is followed as per laid down procedure. Feedback/DCAs are sent to the initiator, as applicable. Where design change group is not formed, design changes shall be reviewed and approved by concerned contract engineer. Due to change in the drawing, its implication on other assemblies/ drawings are also identified.

From Bill of Material, Product Engineering Group generates Shipping List in the form of Dispatch Unit (DU). From Engineering this shipping list is distributed to Shipping and other departments. Shipping department prepares DU as per the shipping list issued by Product Engineering. After completion of each Dispatch unit, it is handed over to the CDC

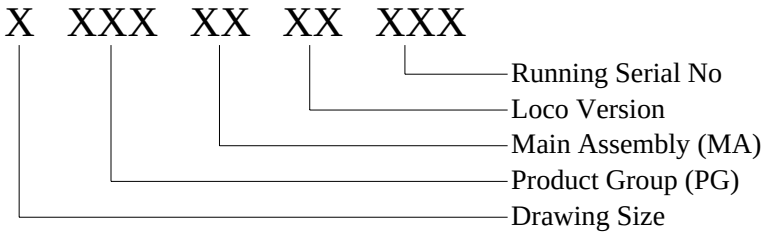
After generation and final approval of the drawing, Print Room receives and maintains Master Card issued by Drawing Office (DO) along with fresh originals as a cardex of that drawing, and maintains revision status on that on receipt of Drawing Change Advices. Drawings related to the products not in manufacture any more, are listed and declared withdrawn by the concerned Product Engineering. On receipt of such intimation Print Room stamp the respective originals and the concerned Master Cards as: NOT-IN- USE: and also mark date and reference of withdrawal. Such originals and Master Cards are stored separately, and are ensured that no more prints are issued from such originals till any reinitiating is instructed by the concerned Product Engineering. As and when a revised drawing is received by drawing vault it is replaced the old which would be destroyed. In case drawing has been issued to an operator he is intimated of the fact of revision by Drawing Vault (DV) Incharge. Engineering issues a statement of all DCAs issued in a month

Drawing no and revision scheme: Drawing no is having 11 Digits.

TRE:



LME:



Above eleven digit drawing number is suffixed with a drawing revision number of two digits e.g. 01. 02 ... and so on. Certain drawings of BHELBhopal and CLW, Chittaranjan are obtained and reissued under same drawing and revision number for use at Jhansi. Any revisions necessitated in these drawings shall be revised by appending an alpha to the original Revision Number of the drawing eg. A, B, C, ... and so on. Thus:

- 2A indicates that Rev 2 of BHEL. Bhopal or CLW has been revised at Jhansi
- 2B indicates a subsequent revision of above Rev 2A
- 2C. 2D... indicate subsequent revisions.

At present all these three Engineering Departments prepares Customer/Manufacturing drawings mostly in AutoCAD or via 3D software i.e. UniGraphics, Ideas. Currently Bill of Material (BOM) is linked with the drawings and is printed on same Drawing Sheets. Work on delinked BOM (eBOM) is going on in ORACLE database. This is as exploded list of BOMs of an Assembly, with added technological information.

BHEL Jhansi is having following users, who will access these data:

Department	**CAD Users**		**CAD Users only for View**		**Non CAD Users**
	2D	**3D**	**2D**	**3D**	
ED & GMs	0	0	0	0	3
TRE	38	2	15	2	1
LME	7	2	3	2	0
PPC	0	0	5	0	1
Shops	0	0	7	2	0
Others	0	0	4	0	8
Total	**45**	**4**	**34**	**6**	**13**

Note:

1. In case of Named user license, the no of software licenses given above will be required. In case of CAD user license, user can switch between 2D and 3D licenses.
2. In case of concurrent user licenses, **35** nos software licenses will be required. Out of 35 nos software licenses min 20nos licenses should be for CAD users. Out of that min 18 licenses for 2D and 2 licenses for 3D-CAD users.

BHEL Jhansi is Having Following Software's

- AutoCAD2009
- AutoCAD2002
- Mechanical Desktop 6
- Mechanical Desktop 4
- UGNX3
- UGNX4
- Oracle 10G

BHEL is having following no of Hard Drawings for scanning

Drawing Size	Transformer Engineering (Approx)	Bus Duct Engineering (Approx)	Loco Engineering (Approx)	Total (Approx)
A0	8800	1300	1500	11600
A1	16500	3000	3000	22500
A2	16500	4500	4500	25500
A3	15400	8000	6500	29900
A4	5500	2000	7500	15000

Number given above are approximate only.

The application software should be able to handle above volume of data.

12. REQUIREMENT:

A Web Based Engineering Data Management System (EDMS) should hold master drawings / documents in an 'electronic vault', where it's integrity can be assured and all access and changes to it monitored, controlled and recorded. The documents can be of specific projects / development projects and can be in the form of standards, customer technical specification, correspondence, Mails, Minutes of meetings, Project specification etc. Software should also be able to automate the Engineering Process via customizable workflow. It should capture the Project information (like project details, customer detail, vendor details, project team etc) and should create Work Break Down Structure.

The software must provide for access/control of the drawings/ documents across WAN networks working under TCP/IP. The software should be very user friendly and should be able of operate smoothly by all the working groups (engineers, draftsman).

1. Electronic Vault

1.1. The server component of the software should constitute a central vault that will be used to store drawings/ documents.

1.2. All drawings/ documents should be stored at a single location (Vault), which is accessible to users across the network.

1.3. The backend database where the drawings / documents will be stored should be on Network based RDBMS like Oracle, MS SQL Server and should have integration to existing Oracle10G database in BHEL Jhansi.

1.4. The software should store data in their native formats, without any conversions to avoid translation errors. The formats which the software can handle should at least include the following

- 1.4.a. AutoCAD (R14 upwards), Mechanical Desktop (version 6.0 upwards) and Inventor formats
- 1.4.b. IDEAS, UniGraphics & SolidWorks formats (including latest versions)
- 1.4.c. Scanned or digitized images (vector as well as raster images)
- 1.4.d. Microsoft Office 97/2000 formats (Excel, Word, Access, etc)

1.5. Server will be having at least 1.5TB NAS disk space with RAID array feature to prevent data loss. Provision of Automatic timely backup to External device like Tape, CDs etc (e.g. Weekly backup of only modified files and complete backup on every month)

1.6. The hardware architecture shall be four boxed with one attached NAS storage vault.

- 1.6.a. Production Application Server
- 1.6.b. Production Database Server
- 1.6.c. Test Application & Database Server
- 1.6.d. CAD Publishing Workstation

These four boxes can be run on one or more server without affecting the performance.

1.7. The software must track related drawings / documents (such as external references, OLE links, links between drawings and bill of materials, etc.) and maintain links across revisions. This relationship should be maintained during check-in, check-out and release of drawings / documents.

2. Project Information Capture

2.1. The system would capture all data related to a project such as Project details, broad technical specification, Client details, Vendor details, contact information and project team details.

2.2. System should capture man hr rates, site details specific to project.

2.3. System should capture project specific Minutes of the meeting review boards.

2.4. System should attach all related document such as customer proposals, schedules, site plans etc.

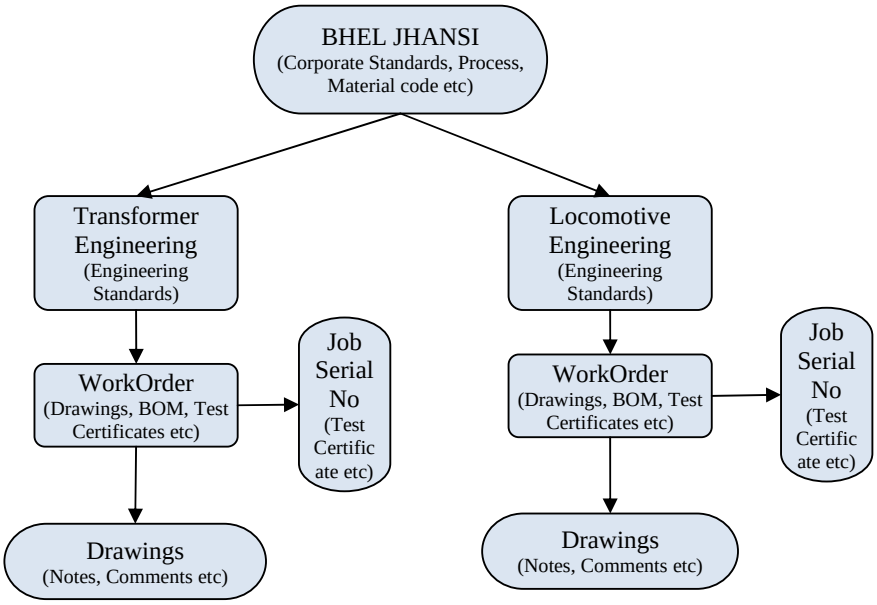
2.5. System should also attached correspondence from MS outlook\Lotus notes and Documents related to project.

3. Drawing and Document Management

3.1. The software should be Web based. No need to install in client PCs. It should use standard web browser for all types of users.

3.2. The software should be able to view the stored drawings / documents in any client without having the software loaded of these drawings / documents in the client.

3.3. Five stages of storage of Drawing and Document is required as shown in fig below.



3.4. Drawing Instructions / associated documents will be attached to Part Number as a document, drawing or sketch.

3.5. System should define document release sequence for a part.

3.6. Drawing can be AutoCAD, DWF or Scanned PDF files.

3.7. Automatic generation of New Drawing no for all Products & PGMAs based on user defined logic.

3.8. Automatic no generation for other documents (like Electrical Specification, Test Certificate etc)

3.9. A Drawing may have more than one sheet (e.g. two separate drawing files having same drawing no distinguish by sheet "1 of 2" & "sheet 2 of 2"). It should also move in a workflow as a single entity.

3.10. Only Authentic AutoCAD file should be able to upload in the Vault. Drawing made in education AutoCAD version should not be uploaded in the vault.

3.11. During uploading of the drawing/document the system should manage the external references (X-Ref)/External Files.

3.12. Before uploading the AutoCAD drawing, system shall automatically purge the drawing to reduce the file size by removing unused items0.

3.13. System should be able to generate user defined title blocks for the company and also flexibility required to specify for project/customer specific title blocks.

3.14. In case of new AutoCAD drawings, title block format depending upon the drawing size should come in the drawing, the metadata (Drawing description, Workorder no, Product Rating etc) of that drawing should be asked by the system and should be linked with the drawing and should also appear in drawing Title Block. It should also update during Revision. In case of Old AutoCAD Drawings and Scanned Drawings, metadata should be linked to the drawing only and not required to come in Title Block.

3.15. Updation of Title block with electronic signatures when routed through workflow.

3.16. The drawing / document should be retrievable for modification, by authorised users only.

3.17. Only one client should be able to modify one drawing at a time.

3.18. Simultaneous viewing of any drawing / document from a number of clients on the network should be possible.

3.19. The software should maintain information as to who has checked out the drawing and should also update the revision history and versions, upon check in of the revised document. The old document shall not be available for checkout document by any other authorised user until the Revised Version has been checked in. The document shall, however, be available for viewing, with a customisable warning that document is under revision.

3.20. The revision trail should be 00, 01, 02 or 00A, 00B, 01A etc as explained in Drawing Revision no scheme. For each revision, revision comments should be asked from the user (who is modifying the drawing) and should be visible along with the revised drawing.

3.21. Revision no for Drawing and BOM will be done separately. If Drawing is revised then BOM will also revised and if BOM is revised then Drawing will not revised.

3.22. Viewing / Printing of 5 old revisions of a drawing and their visal comparison on with the latest drawing. Software should also be able to compare the BOM, metadata of the 2 drawings.

3.23. In case of Old Drawing, the software should allow first time submission with Revision Number other than 00.

3.24. In each drawing, allocation of Workflow for checking and approval within department or other department (like tooling etc) should be done by the authorised users.

3.25. It should be possible to print/plot the drawings/ documents from any station, to any network printer/plotter.

3.25.a. For each print, print job no should be generated by the system.

3.25.b. The log of the printed drawings/ documents should be maintained. The log should contain Job Number, Department Name, Drawing Number, Revision Number, Number of prints etc.

3.25.c. Whenever a print of a drawing is taken that is having a status of Pending Approval or is under Revision, a watermark stating "Drawing Not Approved" or "Drawing Under Revision" must appear on the printed drawing.

3.25.d. In case of Final Approved Drawing, "Drawing is approved and should have print seal, no signature is required" should come in a corner of the print.

3.26. Selective Copying Out (Depending upon Date / Product Structure) of the released drawings / documents along with the profile data to predefined database in Original / PDF / DWF format, should be possible through a authorized user. The name of the copied out drawing should contain Drawing Number, Revision Number, Sheet Number, Variant Number and Department name.

3.27. The number of custom properties that can be attached to a drawing /document should not be less than 50. The user should be able to search the drawings/ documents on any of these properties.

3.28. Access rights of the finally approved (released) drawing and Change Advice Request Form should be set for viewing for all concerned users for the purpose of revision control.

3.29. The system should support Configuration Management of document structure using baselines.

3.30. The system should support Document Structure and navigation of structure.

3.31. It should also be possible to classify document types / category in a workflow for eg: proposals, process document, quality document, minutes of meeting etc.

3.32. System should allow users to assign user specific attributes to documents and drawings.

3.33. The system should provide integration with CAD software, MS Office and Windows Desktop. Common EDMS commands should be accessible on right click in Windows Desktop and within CAD, MS Office environment.

3.34. The system should have the facility for notification, tracking and alert mechanisms and ability for electronic approval of documents & advancing them to the next stage.

3.35. It should be possible to associate a workflow template with a particular document type, so that documents of the same type follow the same workflow process.

3.36. The system should be configurable to incorporate the existing/proposed numbering logic of the groups and enable automatic Document/drawing number generation.

3.37. The system should enforce strict access control procedures where other users cannot edit documents being edited by one user.

3.38. The system should create and maintain revision history and issue dates automatically upon document release, and is automatically updated for tracking purposes.

3.39. The system should have Strong integration with CAD packages for extraction of product structure, item attributes and other information.

3.40. The system should attach action points with responsibility and scheduled date.

3.41. System to support traversing of CAD structure (**Where Used)**.

3.42. System should define standard ISO templates and distribution list for a document type.

3.43. Facility to handle and track sub contracted drawings.

4. Project and task Monitoring (WBS)

4.1. System should create the master Work Break Down Structure for the complete project.

4.2. System should create a Work Break Down Structure master based on project types. The Design and development Plan for a project can also be created from the master.

4.3. Facility to identify drawing/document types as In-house, Outsourced and Vendor supplied.

4.4. Facility to import / export the Work Breakdown Structure to MS Project / Excel / Primavera.

4.5. System should link the task in Work Breakdown Structure either to the creation of drawing/document or to activities.

4.6. Automatic updation of Actual Start date and Actual End date of Work breakdown structure when the drawing/document is routed through the user defined workflow.

4.7. Automatic updation of percentage of completion for a task as and when the stages in the workflow are completed.

4.8. Revision of the Work breakdown structure and its release with the automatic increment of issue level. The history to be maintained and facility to compare the revisions.

4.9. Facility to set escalation or notification based on a) Completion of a task b) Delay of a task c) No of days before Scheduled completion date d) No of days before Scheduled Start date e) Actual Engineering time spent exceeding budgeted duration or reaching defined % of the budgeted time.

4.10. Facility to set reminder in periodic intervals

4.11. System should provide TO DO List to user for pending task.

5. Security & Licensing

5.1. The software should provide multi tier security such as at document level, folder level, user level, group level etc. It should be possible to attach a digital scanned signature to a file for electronic approval of the document.

5.2. Levels of security – minimum Seven levels as specified below:

5.2.a. View permissions

5.2.b. Print Permissions

5.2.c. Check–in and check-out permissions

5.2.d. Owner / Approval Permissions

5.2.e. Archiving permissions

5.2.f. Super-user permissions

5.2.g. Downloading

5.3. The group leader should be able to change the security of the drawings/ documents in a group.

5.4. The administrator should be able to view the information of all the logged in users.

5.5. EDMS system should have provision to generate License usage reports

5.6. EDMS system should generate project specific or global basis audit reports like user based, object based etc.

5.7. EDMS system should have provision of

5.7.a. Trouble shooting and issue resolution

5.7.b. Periodic testing and health check up

5.7.c. Background system monitoring

6. Workflow & Release Process:

6.1. System should be able to define user-defined workflow graphically to all type of documents (like AutoCAD drawing, scanned drawing, pdf, Office document etc) and to define percentage weight age, approval methodology (one or all), and user defined checklist, multilevel escalation, notification and rights to user in that stage.

6.2. Facility to create serial and parallel stages and to define approval methodology (one or all).

6.3. Facility to define default user for each stage.

6.4. It should be possible to bypass the workflow stages and system to keep track of the same.

6.5. Workflow Process should be available for approving the drawings / documents by concerned agencies before release.

6.6. It should be possible to associate a workflow template with a particular object type, so that objects of the same type follow the same workflow process. For example, a review document could have an associated workflow requiring a review process. Such object-linked processes would begin as soon as an object of the specified type is created. This association should be through the object's lifecycle.

6.7. EDMS system should allow process designers to create small processes and link them into larger processes. For example, it should be possible to create a "sign-off" process template and use it in multiple processes wherever a sign-off is required.

6.8. The Workflow Process Designer Tool should be available for easy designing of different Workflow processes.

6.9. The system should have the facility to initiate workflow of group of drawings in one go i.e. all the drawings of a group assembly will be sent by a single command. Also the one agency in a workflow should be able to route different drawings in this group to different other agencies (can be more than one for a particular drawing) depending upon the requirement.

6.10. Activities could be defined as collector activities for control of grouped drawings/ documents.

6.11. Authorized users should be able to represent the following process conditions in workflow:

6.11.a. Conditional branching of the process based on complex logic

6.11.b. Conditional jumps to later or earlier tasks in the process

6.11.c. Merger of branches

6.11.d. "Wait" conditions (wait while other process or task completes)

6.11.e. "Loop" conditions (repeat until condition is met)

6.12. The vendor will provide templates (A0, A1, A2, A3 & A4) for new drawings. The templates in general will be drawing formats with title box in which attributes on the drawings will be linked to database fields.

6.13. When the drawing passes through different agencies their initials, department name and date should appear on the drawing at predefined locations.

6.14. The system should give the option of selecting a template to the user when he starts making a drawing depending upon the drawing size.

6.15. It must be possible to define maximum task durations with escalation procedures (for example, notifying a supervisor in case of escalation)

6.16. System should alert the user via Popup mail as soon as a drawing/document arrived in the workspace or any mail coming to the mailbox.

6.17. System should send notification mails to POP3 external mailing system.

6.18. The system must offer the ability to apply an electronic signature to lifecycle steps, such as the promotion of an object from one lifecycle state to the next.

6.19. The application of such an electronic signature must require the user to enter a password, which may be either the same as or different than the user's standard system password. If the password for applying a digital signature is different, the system must maintain it as an attribute, separate from the standard LDAP passwords.

6.20. The EDMS system should support configuration of processes common to BHEL organization and also workflows specific to Projects. EDMS system should support changes in workflow only for one project without affecting other projects.

6.21. The EDMS should support workflow assignment based on roles defined in project team. These roles should get automatically resolved based on users assigned to the role.

6.22. EDMS software should give flexibility to modify workflow templates at any point of time post implementation. This modification can be for site specific or project specific.

6.23. In case user is out of station, then he can delegate his activities for a limited period to any other user of having same kind of rights. If the user suddenly gets leave, then administrator should able to delegate his activities to any other user at any stage of the running project.

7. Change Management

7.1. Change Management. Modification in drawing is to be done by the request of user departments, within department or via change in customer requirement. This request with comments should be generated through system and should go to the approver of that drawing. The approver has the authority to accept the request and issue the change notice. Based on the change notice only the prepare person should able to change the drawing.

7.2. The EDMS system should support closed loop engineering change management process for document, drawings, beginning from "Initiation of Engineering change request" till 'Engineering change implementation" process in an automated way.

7.3. EDMS Change Management process must be a closed loop system automatically linking issue leading to a change request and finally tracking change implementation. The synchronization between various change objects should be done automatically based on their status.

7.4. The system must include a template including workflow processes for a complete, change management process, including all three Change Administrator roles, the Change Review and Change Implementation Boards, and closed-loop processes for all change objects. This template must support both fast-track and full-track processes.

7.5. The EDMS system should provide a facility to track the changes/modifications made to a document, drawing and model and should provide compare and view facility as well a comparison report.

7.6. The EDMS system should support workflow alerts and notifications so that overdue tasks are visible which will help to remove bottlenecks and delays in extending the duration of change processes.

7.7. System should handle multiple change requests for a drawing.

7.8. Users are prompted the drawing effected due to the revision.

7.9. User should be able to create graphical markups on the document and these markups should be stored in the EDMS system throughout the document's lifecycle.

7.10. The EDMS system should allow searching any object in the system to provide graphical results representation including change processes.

7.11. EDMS system should show Change reports like showing project specific or across projects changes pending, under implementation, closed etc in graphical format

7.12. EDMS system should support automatic propagation of affected data for change from Problem Report creation to Engineering Change Request.

7.13. It should capture and maintain the remarks/comments provided by the user during the engineering change request, approval process and can be used for tracking purposes.

8. Bill Of Material (BOM)

8.1. Import BOM from excel or drawing where BOM is already written on drawing.

8.2. Generate consolidate BOM of the Product.

8.3. System should be able to build the Product Structure based on consolidated BOM and it should display the product structure as a tree view with complete details.

8.4. System should be able to import BHEL ORACLE BOM in EDMS and should be able to generate product structure based on that BOM.

8.5. Import the assemblies or subassemblies as it is into product structure from similar product by choosing from an existing product.

8.6. A part / assembly can be used in many project, therefore the BOM of one part / assembly should be able to call in many project.

8.7. Generate part number automatically for new parts as per company standards.

8.8. Capture part information based on the requirement of ERP.

8.9. Displays the part numbers with different colors based on the status of the part number as Work in progress, Released, Under revision, Standard part etc.

8.10. System should build BOM and automatically paste BOM in AutoCAD drawing in company format.

8.11. Support Generation of BOM from 3D CAD Model.

8.12. System should be able to compare the BOMs.

8.13. BHEL generates standard parametric drawings for standard parametric items/ sub-assembly. While calling these items/ sub-assembly in Product BOM, user passes these parameters against that item in Product BOM. A facility should be there to populate a drawing specific dialogue to ask these parameters in product BOM for above items/ sub-assembly.

8.14. System should be able to release the BOM as As-Designed, As-Manufactured, As-Build or with any user defined name

8.15. If two or more assemblies / subassemblies are of almost similar type or related to each other. Then in many cases these assemblies are prepared in one drawing and are differentiated through variant system in a BOM as shown below.

–	–	–	004	004		008	SPRING WASHER SCB 16
–	–	–	004	004		007	HEX.NUT P M–16–8/R16
–	–	–	004	004		006	SCREWHEX.P M16x40–8.8/R16
002	–	001	–	–		005	PAD 10TKx300x300
–	002	001	001	001		004	PAD 10TKx185x 185
001	001	001	–	–		003	PIPE 80N.B. xA
–	–	–	001	–		002	PIPE 80N.B. x 140 Lg
–	–	–	–	001		001	PIPE 80 N.B.x 157Lg.
VAR. 04	VAR. 03	VAR. 02	VAR. 01	VAR. 00	UNIT OF QTY. / RM UNIT QTY.	ITEM NO.	DESCRIPTION

Above BOM is of Pipe Support drawing. It is having 5 variant (Var00, Var01, etc..) for 5 different types of pipe supports. Based on the selection of variant, the quantities of the items are decided and also its position in the drawing is shown against each variant. Therefore in any BOM, if a drawing is referred for any item / subassembly then it is referred either by item no or by Variant no.

The system should generate the product structure based on the reference selection of Drawing item no / variant no in the BOM.

9. Product Configurator

9.1. Define Standard BOM of product ranges.

9.2. Define standard BOM's with assemblies and parts that are Mandatory, Alternatives and optional.

9.3. Create product BOM from Standard BOM.

9.4. Revise product BOM with reference to Standard BOM.

10. Integration with Existing Oracle based systems

10.1. The vendor has to provide seamless integration with our existing Electronic Bill of Materials (EBOM) system. The vendor shall provide all such tools needed to achieve this integration.

10.1.a. The vendor has to study the EBOM system & do the integration as per present practices in the system.

10.1.b. The BOM data of the drawing should be available to the user through client window.

10.1.c. At the time of filling the EBOM, client window should read the other relevant data (like material code, style list) from the already existing Oracle tables.

11. Transmittal and Submittals management:

11.1. Facility to release the drawing through a transmittal for different stages (Internal release, To Client, Client consultant, Released for Construction)

11.2. Automatic generation of transmittal number as per user defined logic.

11.3. Generation of transmittal format as followed in COMPANY with customer/vendor/ consultant name, address, drawing information and purpose.

11.4. Facility to export the drawings/ documents as attachment to external mail.

11.5. Automatic updating of revision number for different release categories.

11.6. Automatic updating of Work breakdown structure during release of drawing/document attached to it.

11.7. Report on released drawings prints taken by users.

11.8. Facility to ensure manual archive along with electronic archive.

11.9. Print of transmittal as per COMPANY format.

11.10. Release parts through transmittal.

11.11. Facility to Bulk copy latest as Build files of completed project with database information for handover to customer after completion of project.

12. Collaboration

12.1. The EDMS system should enable the various divisions of project to collaborate during any stage of development and the collaboration in terms of viewing, sharing the documents, models, drawings etc.

12.2. The EDMS system should have the concept of secure collaboration spaces using secure Project space that is visible to project team users. When collaboration is required with external suppliers there should not be need to open up this secure repository. A collaboration space can be setup and share data as required with collaboration partners from secure repository into this project. This ensures project team users collaborate on specific information with external agencies, while at the same time maintaining the security of internal data. This information exchange between secure repository and collaboration project should be bi-directional and data should be only linked and not copied again in case of read only.

12.3. Decisions made during review or in the collaborative environment must be captured and be traceable with the action items linked to the concerned resource.

12.4. The EDMS viewer should supports different CAD visualizations in its light weight neutral formats.

12.5. The EDMS system must allow users to view and mark-up data/components without having to have or launch the application used to create the data.

12.6. Visualization Capability to filter parts in the viewer based on properties such as name, attributes release state etc. Also capability should exist to color code the parts on basis of above filters.

12.7. Visualization should support comparison of different revisions of same drawing /3-D model.

12.8. Visualization should generate dynamic cross sections on 3D data with simultaneous display of 2D cross section. Capability to do measurements on the 2D section.

13. Search

13.1. The system shall be able to carry out complex multi-parameter searches against combinations of attributes and objects including relationships. Outputs of such searches will be displayed on the user interface or as hard copy or output to a file. It shall be possible to preview and print or export any data retrieved via the search capability.

13.2. The EDMS System shall allow administrators to save search queries and make it available for all users.

13.3. The system must allow users to save and recall searches so that complex queries that are executed on a regular basis need not be reformulated every time.

13.4. It should have the search facility for the common document area to allow the permitted users to obtain a list of drawings/ documents meeting specific criteria without having

knowledge of complex query parameter. The common search criteria can be defined and saved. In case of MS office or html document, it should be able to search the data inside the document also.

13.5. The system must the entire user to search on custom attributes as well as Out of the box attributes.

13.6. The system should have Key word based (indexing of Meta data and content). The system should automatically index information.

13.7. A search should not return as its result objects to which the user does not have at least read access.

14. Knowledge Management:

14.1. Facility to store or import past problems, causes and solutions in a database and reference them to a part, project, tool or process from Excel sheet.

14.2. Facility to capture tacit knowledge from the Minutes of meetings and action items and store in database.

14.3. Facility to specify Project engineering details and search options to search the Project based on the engineering details.

15. Reports:

Following Reports in proper formats are required to be generated through the system

15.1. Size-wise and Department-wise number of drawings deposited and released on server between any two dates.

15.2. Number of drawings submitted by an individual submitter and released by an individual approver between any two dates.

15.3. Department-wise list of pending status of drawings.

15.4. Department-wise / Section wise / Project wise list of change advice processed between any two dates.

15.5. Master list of drawings and documents.

15.6. Department-wise / Section wise list of drawings on server which are printed on a date or between any two dates.

Also monthly and yearly reports of prints generate.

15.7. List of job orders pending under various categories.

15.8. The administrator should be able to see the complete workflow a document has passed through and where it is presently lying pending for action just by entering the document number.

15.9. Size-wise and department-wise number of released drawings copied out by administrator for archival purpose using Copy-Out utility.

15.10. Project status report.

15.11. Minutes of meeting for a Project / Document.

15.12. Earned man hours report.

15.13. Document monitor list.

15.14. Expediting query report.

16. Additional Features

16.1. The vendor will integrate with BHEL Jhansi mailing system.

16.2. Drawing Number should be automatically generated depending upon the present system (logic) prevalent at BHEL, Jhansi.

17. System Architecture

17.1. The EDMS software must support Web-based security protocols such as HTTPS/HTTP.

17.2. The system should make use of standard, well-understood Web technologies such as: J2EE and Java Beans, Java Server Pages, Java Message Service, HTML, HTTP, HTTPS, XML, XSL, SOAP, LDAP etc.

17.3. The EDMS Software shall be based on Web based architecture with no requirement of installing client module. The system must make use of standard, well-understood Web technologies however compatibility with MS IIS Server will be a desirable feature.

17.4. The EDMS web application shall be compatible with 64 bit operating system.

17.5. The EDMS Software shall support advanced secure file management support for storage and retrieval.

17.6. The EDMS Software shall store data in their native formats and should handle the following formats seamlessly: Unigraphics, Solidworks, Inventor, AutoCAD, scanned images (jpg, bmp, giff, and tiff), neutral formats, and tight integration with Microsoft Office applications and .pdf files.

17.7. The backend server should store the related metadata information in RDBMS.

17.8. The data stored within The EDMS Software shall be available to users strictly in the secured environment based on roles, user ID and passwords.

17.9. A proper version control should be available with facility to maintain and control the version of data stored.

17.10. The EDMS Software shall support proper backup facility for storage / retrieval of data like online backup facility.

17.11. The EDMS Software shall have an organized data repository with administrative policies for access control, notification and indexing.

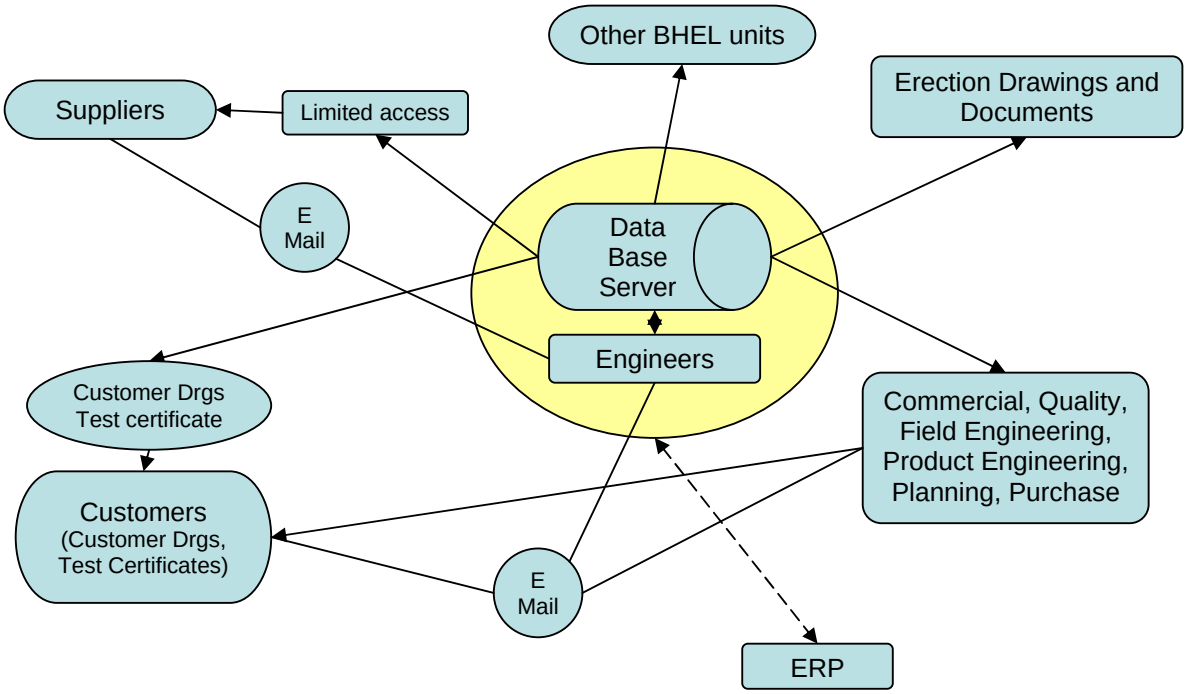
17.12. The EDMS Software shall provide customized queries for searching the data stored in the database.

17.13. The EDMS server application shall have necessary components for Authoring, Reviewing, workflow management, change management, configuration management, visualization etc (basic and advance).

17.14. All modules of EDMS should be provided by single and should be available in single database and should need user to login only once to access any modules based on his role. All data generated by these modules should be stored in single database. The User Interface should be web based for all modules of EDMS being proposed.

17.15. Vendor to furnish details on configuration capabilities of the EDMS software

13. GENERAL SYSTEM REQUIREMENTS:



13.1. Complete solution: The vendor shall provide a complete software solution, which includes all software modules.

13.2. Clients should run on Pentium IV, Dual Core machines running Windows XP, Windows Vista Operating System.

13.3. The system should be capable of implementation on enterprise wide basis. The software shall support multiple server environments (operating under different platform) without any degradation of performance. This shall allow document and database to be stored and accessed from different servers at different locations (physically separated).

13.4. The software should have tight integration with AutoCAD (R14 and 2009) and other 3D CAD Software's like UG, IDEAS, Inventor, Solid Works. The general activities like check-in, check-out, approval, workflow etc. can be done directly through AutoCAD and 3D softwares. Process Scheduling and Monitoring along with report generation and online document status facility should be available in the system.

13.5. The new system should have integration with ERP.

13.6. Software should be able to generate the report in a form of graph or Bar/Pie chart for a project or for a product depending upon the queries.

14. TRAINING:

14.1. Two tier training is envisaged

14.1.1. Lower end training to users, who will use the data management solution.

14.1.2. Higher end training to selected engineers who will be apprised of the complete development process of solution. They will be given necessary inputs to guide users to resolve problems and to enable to make modification in software.

14.2. Vendor shall provide training on the solution offered in a phased manner to all the users, administrator, and the management personnel. The low end training shall be having minimum 4 batched for 25 persons for one week each. The high end training shall be for minimum 6 persons for two week.

14.3. Vendor shall provide training from the person having experience of at least 2 years.

14.4. Vendor shall provide basic training on Hardware, OS and RDBMS to all administrators after the installation of the same. Training on Hardware, OS to be completed before the declaration of system installation complete.

14.5. Vendor need to formulate a training requirement in the structured manner for direct users and administrator.

14.6. On completion of the offered training, BHEL personnel should be in a position to use, administrator and modify on incremental requirements without the assistance of the Vendor or any other Product vendor.

14.7. Under software AMC, vendor shall provide the training for the updates / upgrades of the software supplied.

14.8. Vendor shall provide min 3 days refresher training program each year during AMC.

14.9. The vendor shall provide training at BHEL premises. The schedule for training shall be indicated by the vendor and finalized based on mutual agreement between the vendor and BHEL.

14.10. Complete training program including contents and course material etc. shall be approved by BHEL before commencement of training.

14.11. In case of unsatisfactory training of the trainer, BHEL has right to replace the trainer.

14.12. Vendor to provide required training with proper course kits that shall involve standard features of the implementation as well as customized features of the solution.

14.13. Vendor shall furnish Training schedule (e.g. Topics, No of Training Days, Trainer experience etc) in Technical Bid.

15. DOCUMENTATION:

15.1. Vendor to furnish the document as per Software Product Life Cycle Standard IEEE 12207 which includes:

15.1.1. Software Requirement Specification

15.1.2. System Design

15.1.3. Test Plan

15.1.4. Test Records

15.1.5. User Manual

15.1.6. Maintenance Manual

16. SOFTWARE & HARDWARE AMC:

16.1. AMC shall include supply and installation of upgrades and updates and software support.

16.2. AMC shall include resolution of software problems being encountered by users.

16.3. AMC shall include maintenance of customization and migration to new versions/new products.

16.3.1. Vendor shall give the services for maintaining compatibility with software updates/ upgrades.

16.3.2. Removal of bugs etc shall be in the scope till the term of the resident engineer expires.

16.4. Bidder shall immediate revise site license within 24Hrs in case of replacement of network card or due to breakdown or upgradation of hardware.

16.5. Information on updates and upgrades, product enhancements, etc. to be communicated timely to BHEL.

16.6. Refresher training programs for updates / upgrades of software being supplied shall fall under the scope of support.

16.7. Software licenses should work after AMC.

16.8. One qualified engineer to be posted before delivery of equipment. AMC shall cover services, repairs and replacements necessary to keep the equipments in good working order on reasonable use of the equipment. Periodic maintenance check should be carried out to keep the equipments in good working conditions.

16.9. Vendor shall attend the complaint within 24 Hrs and shall rectify the same in next 24 Hrs.

16.10. Any software updates, patches updates including version change with respect to the OS, applications and DB should be regularly provided during the AMC period.

17. OTHER TECHNICAL TERMS & CONDITIONS:

17.1. Bidder shall furnish the complete software details under the head “For development and “For deployment “.

Development means what are software the modules that you would be using for developing the customized solution.

Deployment means what are the software licenses that would be ultimately installed in BHEL. (Please indicate the composition of any bundle and quantity also. Please give the names by which they are commercially known.)

17.2. Bidder shall furnish complete Hardware, OS & RDBMS details that would be supplied and installed in BHEL.

17.3. The Bidder shall submit the proposed plan of execution and the methodology to execute the plan at the time of bid submission.

17.4. Successful bidder shall constitute a project implementation team headed by the project manager. This team will work with BHEL Engineering team to formulate the exhaustive project implementation plan for faster execution of the project.

17.5. The Successful Bidder shall assign a Project Manager with IT experience of around 5 years as the single point of contact for BHEL.

17.6. All EDMS modules required by BHEL should come from a single OEM.

17.7. Any customization done has to be documented and source code to be shared with BHEL.

17.8. Vendor to also make available customer references in India for EDMS application being recommended. BHEL can visit few of the reference customers as required during Technical evaluation.

17.9. Vendor to also share best practices available in the EDMS solution on various processes.

17.10. The bidder must implement and integrate the application software on the hardware supplied by the bidder.

17.11. Must have system integration experience in a heterogeneous environment spanning multiple Hardware, Software and legacy systems across various platforms. Also the vendor must have implemented this kind of solution at work group as well as at enterprise levels.

18. SOLUTION AREAS:

Vendor to specify (Yes/No) whether functionality expected in table below is available using following

S.No.	Solution	Available as OOTB using Configuration	Available as customisation (Programming)	Integrated using third party tools	Not Available
1	Electronic Vault	Mandatory			
2	Document Access & Retrieval	Mandatory			
3	Security & Licensing	Mandatory			
4	Workflow & Release Process	Mandatory			
5	Collaboration	Mandatory			
6	Change Management	Mandatory			
7	Search	Mandatory			
8	Integration with existing EBOM system				
9	Reports	Mandatory			
10	Project Details	Mandatory			
11	Where Used	Mandatory			
12	VAR in BOM as per clause 12.8.15 page39				
13	Integration with CAD	Mandatory			

All the above mentioned functionalities should be available using any on the above 3 tools except the mandatory ones.

Note:

1. Out of the box (OOTB) using Configuration. Configuration is through User Interface Wizards.
2. Through customization. Customization is where programming is used.
3. Third party software. Vendor to also mention name of third party software.

19. DEMONSTRATION OF FUNCTIONALITIES:

The vendor shall demonstrate free of cost the following features/functionalities before opening of price bid:

19.1. Import the 2D AutoCAD drawings and feeding of its BOM through the application software. 2-D Drawing storage based on Assembly Structure generated from BOM.

19.2. BOM version control as given in clause 12.8.15 page39.

19.3. Visual comparison of 2 versions of AutoCAD drawings and logical comparison of 2 versions of BOM.

19.4. Linkages of AutoCAD drawing Title block data with the application software.

19.5. Connectivity to Oracle Data Base.

19.6. Workflow and Printing of the drawing in demo scenario provided to the vendor.

19.7. Where used (No of Assemblies / Subassemblies where particular component is being used)

19.8. Create new project structures based on predefined templates

19.9. Change Management: Drawing modification Request, Drawing Change Advice

19.10. Markups: Each Comments / Markups of check, review and modification request should be saved individually and should be available in that drawing.

19.11. Multiple / Boolean Search based on attributes.

19.12. Integration with 3D software.

19.13. AutoCAD/UG/MS office attribute mapping.

20. DOCUMENTS TO BE SUBMITTED ALONG WITH THE OFFER:-

The following documents should be attached with the tender documents - Technical Bid forming part for submission in totality but not limited to:

20.1. Qualifying Requirement – Clause 14 of Terms and Condition

20.2. Declaration – Annexure A

20.3. Un-priced Price Bid Format with all details including applicable taxes – Annexure B

20.4. Third Party Non-Disclosure Agreement – Annexure C

20.5. Assumption/ Deviation – Annexure D

20.6. Software Details under the head “for Development” and “for Deployment” – Annexure E

20.7. Computer Hardware Details. – Annexure F

20.8. Training schedule (e.g. Topics, No of Training Days, Trainer experience etc) – Annexure G

20.9. Implementation plan/schedule for above scope.

20.10. Details of Major Executed Project - Annexure H

20.11. Details of Projects executed on Hardware system supply and Integration – Annexure I (Attach Purchase Order and completion certificate of 3 projects of supplying and integrating hardware solution in past 3 years by complete Hardware system integrator)

20.12. Certificate from Hardware supplier for Support and Services – Annexure J

20.13. Annual Turnover Chart (Audited annual accounts of last 3 years) – Annexure K

20.14. CV of the probable team undertaking this project. – Annexure L

20.15. 3 case studies / customer satisfaction report of similar EDMS application along with customer reference in India. It is preferable to have electrical industry case studies.

20.16. Solution Area as per clause no 18.

20.17. Customer certificate on implementation of the Data Management software integrated with ERP.

ANNEXURE E

‘SOFTWARE DETAILS’

Tender Enquiry No. …… due date **…….……**

S.No.	Software Module (used for Development & Deployment)	For Deployment (Qty)	For Development (Yes/No)	License Type (Named user / Concurrent)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Place:

Date: Signature with seal

ANNEXURE F

‘HARDWARE DETAILS’

Tender Enquiry No. ……. due date **…….**

S.No.	Hardware Name	Hardware Configuration	Make	Qty	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Place:

Date: Signature with seal

ANNEXURE G

'TRAINING SCHEDULE'

Tender Enquiry No. …… due date **…….……**

S.No.	Training Schedule	Training Topics	Participants (Project Leader/ Developer/ Administrator/ User)	No of Days	Trainer Experience (No of Years)
1					
2					
3					
4					
5					
6					

Place:

Date: Signature with seal

ANNEXURE H

EXECUTED MAJOR ORDER DETAILS

During last 3 years

(As per Qualification Criteria)

Tender Enquiry No. …… due date **…….……**

S.No.	Organisation Name/ Contact Person details	Technical details of Type of Work Done	Project Cost (Rs)
1			
2			
3			

Place:

Date: Signature with seal

ANNEXURE I

EXECUTED MAJOR ORDER DETAILS ON HARDWARE SUPPLY AND INTEGRATION

During last 3 years

(As per Qualification Criteria)

Tender Enquiry No. …… due date **…….**

S.No.	Organisation Name/ Contact Person details	Technical details of Type of Work Done	Project Cost (Rs)
1			
2			
3			

Place:

Date: Signature with seal

ANNEXURE J

FORMAT FOR "CERTIFICATE FOR HARDWARE INTEGRATION, SERVICE AND SUPPORT"

Tender Enquiry No. …… Due on ……

To,

_____
_____

Subject: **Certificate for Hardware Service and Support**

Tender Ref. No.: ……

Dear Sir,

We hereby certify that the all required system integration, support / service will be provided by us during warranty and AMC period for following Hardware / Software supplied for tender enquiry ref. no. …… due date .....

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

The authorized agency would ensure reliable service during complete Warranty / AMC period. In case of any default alternative arrangement would be done by us on the same terms and conditions as negotiated and finalized in this tender enquiry.

(Authorized Signatory)

For _____ Place:
Date:

Note: This Letter of Authority' should be issued on the letterhead of Hardware Supplier and enclosed in Part-I.

ANNEXURE K

'ANNUAL TURNOVER OF BIDDER'

Tender Enquiry No. …… due date **…….**

S.No.	Financial Year	Turnover (In Rs. Crores)
1	2006-2007	
2	2007-2008	
3	2008-2009	

Place:

Date: Signature with seal

ANNEXURE L

'CV OF PROBABLE PROJECT TEAM MEMBERS'

Tender Enquiry No. …… due date **…….**

S.No.	NAME OF MAMBER	ROLE IN TEAM (Project Leader/ Team Member, Consultant)	Experience on doing similar projects (Years)	Qualification
1				
2				
3				
4				
5				
6				
7				

Place:

Date: Signature with seal