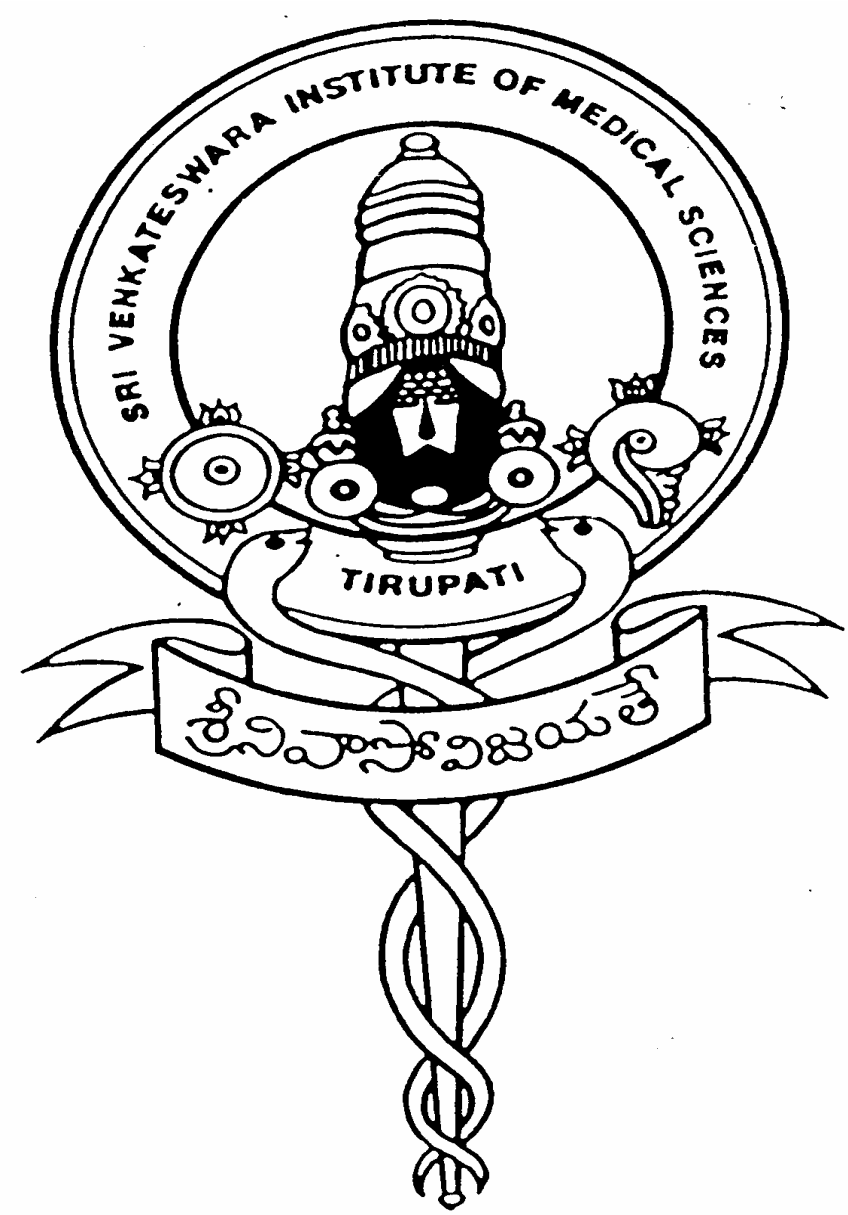
TENDER DOCUMENT
FOR EQUIPMENT



OFFICE OF THE
Asst. Director (Purchase)
SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI.
(SVIMS)

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES: TIRUPATI

TENDER SCHEDULE FOR THE SUPPLY OF EQUIPMENT

DUE DATE 26.10.2012

(To be submitted along with your technical offer)

Phone: 0877-2287777 Ext: 2223, 2224
Fax: 0877 - 2286803 / 2286116
E-mail: svimshosp@yahoo.com
purchase.svims@gmail.com

Separate Tender forms are to be used for each equipment.

Name of the Tenderer :

Equipment quoted :

I / We hereby offer to supply the equipment referred to and as described in the Annexed Schedule at the rate noted against It for delivery at the office of the Assistant Director (Purchase), Sri Venkateswara Institute of Medical Sciences, Tirupati as per the annexed rules, terms & conditions of the contract. The annexed terms & conditions are duly signed in token of my / our acceptance of the same and returned herewith.

The crossed Demand Draft for Rs. _____ towards the E.M.D. is enclosed.

Yours faithfully,

Place :

Date :

Signature of the Tenderer.
(To be signed by authorized Signatory)
Full Address of the Tenderer

NOTE: This document is not transferable.

DECLARATION

I / We do hereby declare that I / we shall keep my / our offer open for a period of six months for acceptance. I / we shall abide by and give my / our acceptance to the annexed terms & conditions of the tender and purchase order and shall execute an agreement in the prescribed form, in the event of my / our offer being accepted by SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES.

Place :

Date :

Signature of the Tenderer
(To be signed by an authorized signatory)

MANDATORY REQUIREMENTS:

1. EMD in the form of Demand Draft.
2. Authorization Certificate from Principal/self declaration stating that the tenderer is the manufacturer.
3. Separate covers for Technical Offer & Financial Offer.
4. VAT registration certificate
5. Five years warranty period certificate
6. Affidavit on Rs. 10/- non-judicial stamp paper stating that the firm has not been convicted / black-listed by any hospital / organization and the firm has no VIGILANCE/CBI/FEMA case pending against him/supplier(principal)
7. Affidavit on Rs. 10/- non-judicial stamp paper stating that the Tenderer will provide all the service i.e. man power, parts, accessories and consumables during warranty and AMC period (10 years)

Note: If the above requirements are not met, the tender is liable for rejection, at the discretion of SVIMS.

CHECK LIST OF ENCLOSURES TO THE TENDER SCHEDULE (to be filled in by the Tenderer)

01.	Tender Schedule	: ENCLOSED / NOT ENCLOSED
02.	E.M.D.	: ENCLOSED / NOT ENCLOSED
	Bank Draft No. & Date	:
	Bank Name	:
	Drawn On	for Rs.
03.	VAT Certificates	: ENCLOSED / NOT ENCLOSED
04.	Five years warranty certificate	: ENCLOSED / NOT ENCLOSED
05.	Authorisation Certificate	: ENCLOSED / NOT ENCLOSED
06.	Illustrative Literature	: Particulars.
		1)
		2)
07.	Certificate of Agency if any	: ENCLOSED / NOT ENCLOSED
08.	Compliance statement	: ENCLOSED / NOT ENCLOSED

09. Affidavits (02) as per the above mandatory requirement vide point no. 06 & 07.
: ENCLOSED / NOT ENCLOSED

10. Affidavit that the firm is not supplying the same item at the lower rate than quoted in the tender to any Govt. organization or any other Institute (Fall clause) :
ENCLOSED / NOT ENCLOSED

11. Quality assurance certificates like CE, ISO, US, FDA or any other.
Please specify: _____

12. Technical quotation of the equipment quoted with full details of the equipment along with warranty period and AMC charges and other terms and conditions :
ENCLOSED / NOT ENCLOSED

13. List of Consumables along with prices with validity period (to be enclosed in cover – B). : ENCLOSED / NOT ENCLOSED

Place :
Date :

Signature of the Tenderer
(To be signed by an authorized signatory)

N.B: Tenderer has to verify and mention above, whether the particular documents are enclosed or not.

INFORMATION TO BE FILLED IN BY THE TENDERER:

01. Make & Model offered :

02. Country of the origin of the goods :

03. Servicing / Repair facilities : availability in India.

04. Availability of Spares & Consumables : for next 10 years

05. Particulars of Institutions to whom : similar supplies were made (Enclose separate list)

06. Whether rates are quoted as per tender specifications:

07. Time required for supply from the date : of order

08. Breakdown response time in hours :

09. Lead time in days for supplying spares : Indigenous :
Imported :

Place :
Date : **Signature of the Tenderer**

TERMS & CONDITIONS FOR SUPPLY OF HOSPITAL EQUIPMENT TO SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, T.T.Ds., TIRUPATI – 517 507, ANDHRA PRADESH, INDIA

01. Sealed tenders from the manufacturers or their authorized distributors or accredited dealers or agents or stockists are invited for supply of the equipment as per the enclosed specification, in duplicate, by the Director, Sri Venkateswara institute of Medical Sciences, TTDs., Tirupati – 517 507, as per the notification already issued.

02. Sealed cover containing 'Technical Offer Cover'(cover A) and 'Financial Offer Cover'(cover B), duly super scribing as **"**Tender for the supply of ----------due on **26.10.2012",** addressed to the Director, Sri Venkateswara Institute of Medical Sciences, Tirupati - 517 507**, should be delivered at Purchase department** on or before 2.30 **p.m. on 26.10.2012.** Postal and courier delays shall not be considered.

N.B. If the above date is declared as holiday, the next working day shall be the due date for receipt of tenders.

03. If the tender document is downloaded, the tenderers shall enclose the tender cost in the form of DD drawn in favour of The Director, SVIMS and to be submitted along with the EMD. The Tenderer should attest any alteration or overwriting. The Tenderer has to sign on each page of the tender document by affixing seal.

04. EARNEST MONEY DEPOSIT:

(i) Every tender must be accompanied by a crossed Demand Draft for the amount given in the tender notice towards EMD, payable on any scheduled Bank at Tirupati, and in favor of the **DIRECTOR, SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI.**

(ii) EMD is not accepted in the form of cheques, postal orders, bank guarantees or bank demand drafts issued on the personal name of the Officers of Sri Venkateswara Institute of Medical Sciences, TTDs, Tirupati or by any other mode of remittance.

(iii) The E.M.D. will be returned to unsuccessful Tenderers without interest after one month from the date of finalization of tender. The E.M.D. amount will be returned to the successful Tenderer without interest after submission of Security Deposit.

(iv) The EMD amount in the form of Demand Draft is to be enclosed in the "TECHNICAL OFFER COVER".

(Signature of the Tenderer)

05. SECURITY DEPOSIT :

(a) Successful Tenderer shall be required to pay security deposit of 10% on Cost Insurance Freight(CIF) or Free on Road (FOR) value inclusive of the taxes by way of Demand Draft within 15 days from the date of placement of purchase orders and shall execute an agreement for faithful and satisfactory performance of contract. Specimen copy of the agreement is enclosed. The Security Deposit amount will be returned only after the successful completion of warranty period. If the value of the Security Deposit is more than Rupees One lakh, the same may be submitted in the form of Bank Guarantee. The validity of Bank Guarantee shall be 66 months.

(b) If the Successful Tenderer fails to lodge security deposit within the period of 15 days as specified above, such failure will constitute a breach of terms and conditions of the tender and the Earnest Money deposited by him will be withheld in addition to recovery of any loss sustained by the Institute.

(c) The tenderer will forfeit the Security Deposit for any non-performance of the equipment or default during warranty period.

06. GENERAL CONDITIONS:

1. Tenderer is required to sign the declaration given in second page of the tender document, indicating date and affixing the rubber stamp with the designation or status enjoyed by the signatory in the firm, and the same signatory shall be required to execute agreement under his signature only. The signatory should produce documentary evidence of empowering him to do so, if called upon at any time during the contract period. In case of change of the person of the signatory it is bound on the Tenderer to inform the changes to the SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES.

2. The Tenderer has to mention about the availability of spares for next 10 years, nearest service centers, and willingness to train our Bio-Medical Engineer for minor problems and also to **submit circuit diagram and Schematic diagram.**

3. The Tenderer has to mention about the willingness for entering into service contract with spares for five years or more after warranty is over, along with necessary terms & conditions (i.e. servicing CAMC condition).

4. No commission will be paid to Indian agents.

5. This invitation is under Two Bid (Techno-Commercial) System. Separate sealed covers are to be used for technical details and price details.

Cover 'A': Technical offer i.e. full details of the equipment and accessories offered (quotation without price), EMD, Catalogues, Tender document, LC opening Instructions ,Terms & Conditions, Warranty, AMC charges (in percentage only) etc.

Cover 'B': Only price details of the equipment, accessories and AMC charges.

Note: To mention as "Technical Offer" on Cover `A' and as "Financial Offer" on Cover `B' and the "name of the equipment" and "name of the Tenderer" are to be mentioned on each cover. No financial details shall be given in cover 'A'.

Tenders not submitted as per the above system will be summarily rejected. The price offers of technically rejected firms will not be opened.

(Signature of the Tenderer)

6. The Tenderer has to quote OGL reference if any.

7. The Principals have to issue a certificate to the effect that they will take responsibility if Indian agent fails to attend service or if there is any change in Indian agency during warranty / AMC period.

8. To produce a Certificate from Principals to continue / accept service contract at the rate mentioned in the purchase order in the event of change in Indian agency, to be submitted after issuing the Letter of Intent.

9. Principals / Indian agents should inform us well in advance of shipment, about the civil & electrical works that are needed for Installation. Indian agents should be present at the time of opening of boxes to certify the correctness of the equipment.

10. If Principals are not able to ship the goods before the expiry of Letter of Credit period, they have to pay Bank charges like, extension charges, cable charges etc.

11. If selected, security deposit is to be submitted by the Indian agents. If Principal and agent are same, Principals can submit the Security Deposit on behalf of Indian agents.

12. Tenders from the persons / firms convicted under the Sales Tax or any other relevant Acts and Rules will be rejected summarily. The Tenderer has to submit a self declaration regarding non-conviction under any law/ by any hospital on a non-judicial stamp paper of Rs.10/-.

13. Terms and conditions of the sale of each item or the items should be precise and clearly mentioned in tender(s).

14. Illustrative literature should invariably accompany the tenders and it should also bear the signature of the Tenderer for identification. The tender specification compliance statement has to be enclosed indicating the fulfillment of each parameter.

15. The acceptance of the tender will be intimated to the successful Tenderer within the validity period of the tender and if some delay is likely to occur, Tenderer will be required to keep their offer open for further period as may be found necessary.

16. Tenders which are not in accordance with the specifications mentioned shall be rejected.

17. ***Warranty is must for 5 years*** and it starts from the date of installation.

18. The successful Tenderer along with supply of the equipment has to provide certificate to the effect that the equipment supplied is not refurbished equipment issued by any Government agency.

19. The successful Tenderer has to enter into a performance agreement with SVIMS.

20. The tender document should be paged and a certificate may be provided on the covering letter indicating the number of pages submitted along with the tender.

21. A check list of all the enclosures with serial number and page Number is to be furnished properly.

(Signature of the Tenderer)

22. The Tender forms be clearly filled in ink legibly or type written giving full address of the Tenderers. The Tenderers should quote in figures as well as in words the rates amount tendered by him/them. Any discrepancy between the figures and words, the amount written in words will prevail. Alterations/over-writings, unless legibly attested by the Tenderer, shall disqualify the tenders. The tenders should be signed by the Tenderer himself/themselves or his/their authorized agent on his/their behalf (Authorization may be enclosed, if applicable).

23. IF THE EARNEST MONEY DEPOSIT IS NOT SUBMITTED, THE TENDER SHALL NOT BE CONSIDERED FOR ACCEPTANCE AND WILL BE OUTRIGHTLY REJECTED. THE EMD SUBMITTED AGAINST OTHER TENDERS CANNOT BE ADJUSTED OR CONSIDERED FOR THIS TENDER. NO INTEREST IS PAYABLE ON EMD.

24**.** THE TENDERERS ARE REQUIRED TO DEMONSTRATE THE QUOTED MODEL OF THE EQUIPMENT DURING THE TECHNICAL EVALUATION, IF REQUIRED, FAILING WHICH THEIR TENDERS/OFFER SHALL BE REJECTED. The firms are intimated that they should get ready for demonstration and only one-week time will be provided for arrangement demonstration and no request for extending time for demonstration will be entertained.

25. Tenderers submitting tenders would be considered to have considered and accepted all the terms and conditions. No enquiries, verbal or written, shall be entertained in respect of acceptance or rejection of the tender.

26. Any action on the part of the Tenderer to influence anybody in the said Institute, will be taken as an offence, and they will not be allowed to participate in the tender enquiry and their offer will not be considered.

27. Genuine equipments and instruments etc., should be supplied. Tenderers should indicate the source of supply i.e. name & address of the manufacturers from whom the items are to be imported, country of origin etc.

28. The Tenderers are required to quote the mode of shipment i.e. Air / Sea and should give separate breakup of freight and Insurance Charges.

29. If the foreign co., participating directly in the tender, an undertaking letter from the Indian dealer is mandatory stating that the Indian dealer will continue maintenance and servicing of the equipment if the principal co., defaults.

08. TENDER PRICES:

The Tenderer shall indicate, on the Price Schedule provided, all the specified components of prices shown therein including the unit prices and total tender prices of the goods and services it proposes to supply against the requirement. All the columns shown in the price schedule should be filled up as required. If any column does not apply to a tenderer, same should be clarified as "NA" by the tenderer.

I. *(a) If offered from with in India.*

(i) Prices shall be given in Price Schedule A. Institute is not authorised to issue Form "C" or "D".
(ii) No enhancement of price will be allowed.

(Signature of the Tenderer)

(b) If offered from out-side India.

(i) Prices shall be given in Price Schedule B.
(ii) **Bank charges outside India are to the account of beneficiary**.
(iii) The port of landing is **Chennai.**

II. Telegraphic and pencil quotations will not be accepted.

III. Unsigned tenders are liable for rejection.

IV. The rates quoted should not exceed the maximum price, if any fixed by an order issued by the Central / State Government.

V. Rates quoted in the tender (s) should be valid for acceptance for a period of six months from the last date fixed for the receipt of tenders. No permission will be granted to modify the rates until the negotiations are called for. Once the rate is accepted, the successful Tenderer shall not withdraw from the contract.

VI. The cost of Comprehensive Annual Maintenance Contract (CAMC) for 5 years after 5 years warranty will be added to the tender price for calculating L-1 price. The Price Schedule C shall be duly filled in.

VII. The State Bank of Hyderabad's Letter of Credit opening rate for a particular currency on the date of price bid opening will be considered for the purpose of price comparison.

VIII. Tenders by vague and indefinite expression as "Subject to prior sale or subject to stocks being available" etc., are liable for rejection at the discretion of SVIMS. Penal clauses from the Tenderer whatsoever like interest on late payments of bill etc., will not be accepted.

IX. Make, Country of Origin, Brand Name, Type Mark, Strength, Catalogue No. etc., should also be clearly mentioned against each item.

09. In exceptional circumstances, the purchaser may solicit the tenderer's consent to an extension of the period of tender validity. The request and the responses thereto shall be made in writing (or by cable or by telex). The earnest money deposit provided under clause 04 shall also be suitably extended. A tenderer may refuse the request without forfeiting its earnest money deposit. A tenderer granting the request will not be required nor permitted to modify its tender.

10. No tender may be withdrawn in the interval between the deadline for submission of tenders and the expiration of the period of tender validity specified by the tenderer in the tender form. Withdrawal of a tender during this interval may result in the Tenderer's forfeiture of its earnest money deposit.

(Signature of the Tenderer)

11. The purchaser may waive any minor informality or non-conformity in a tender, which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any tenderer.

12. Evaluation and comparison of tenders.

The purchaser's evaluation of a tender will include and take into account:

i) in the case of goods manufactured indigenously or goods of foreign origin already located in India, excise duty, sales tax and other similar taxes and duties, which will be payable on the goods if a contract is awarded to the tenderer and;

ii) in the case of a goods of foreign origin offered from abroad, customs duties and other similar import duties/taxes, which will be payable on the goods if the contract is awarded to the tenderer. The purchaser's evaluation of a tender will exclude and not take into account the additional features like training in India or abroad offered free or at an additional cost unless specifically asked for in the 'Technical Specifications'. The comparison shall be on Free Delivery At Site basis and commissioned at consignee's end. The purchaser's evaluation of tender will take into account, in addition to the tender price and the price of incidental services, the following factors, in the manner and to the extent indicated.

a) Cost of inland transportation and other costs within India incidental to delivery of the goods to their final destination at consignee's site,
b) delivery schedule offered in the tender,
c) deviations in payment schedule from that specified in the conditions of contract,
d) the cost of components, spare parts and service,
e) the cost of installation and commissioning,
f) the cost of guarantee/warranty and
g) the Performance and productivity of the equipment offered.

13. SERVICING (CAMC) :

i) The Tenderer should give an undertaking that he will provide all the service required i.e. man power, parts, accessories, consumables etc., during warranty and AMC period (10 years) on a Rs. 10/- non-judicial stamp paper. The equipment must have servicing facilities in Andhra Pradesh or Karnataka or Tamilnadu with spares for replacements and repairs. The details of immediate availability of "after sales service" facility should be specifically mentioned in the quotations. The after sales service should be available for minimum period of 10 years. Institute's comprehensive maintenance charges are 4% or less CIF/FOR value per annum for all years.

ii) The Tenderer has to enclose a letter from the Principal confirming that Principal will provide all the support for 10 years from the date of installation.

iii) The supplier shall enter into Comprehensive Annual Maintenance Contract, 3 (three) months prior to the completion of Warranty Period. The CAMC will commence from the date of expiry of the Warranty Period.

iv) The Purchaser reserves the rights to enter into Comprehensive Annual Maintenance Contract between the Purchaser and the Supplier for the period as mentioned after the completion of warranty period.

(Signature of the Tenderer)

During Comprehensive AMC period institute will not bear any cost including customs duty, clearance, servicing charges and any other taxes. A.M.C. amount will be paid in two installments i.e. 50% as advance and 50% after successful completion of AMC.

During warranty / A.M.C. period, calls have to be attended within 24 hours, else company has to either extend the warranty / A.M.C. for 5 days for each day of delay and pay penalty as decided by the Institute. The call may be made by SVIMS through letter, courier, fax, mobile, phone or pager.

In the case of warranty / Comprehensive AMC, the period of procurement of spares which are available locally (in India) shall not exceed 3 days and which are not available locally (imported), shall not exceed 7 days. If it exceeds the permissible period, the company has to either extend the warranty/ Comprehensive AMC period by 5 days for each day of delay or pay penalty as decided by the Institute.

During the Annual Maintenance Contract you have to attend 4 Periodical Preventive Maintenance calls and unlimited number of breakdown calls.

v) In the event of, non-functioning of the equipment exceeding the permissible period (95% uptime) , the tenderer has to either extend the period of warranty or maintenance service by 5 days for each day which is in excess of the prescribed period or pay penalty . If the equipment is unattended or exceeds the permissible period or if the equipment is going out of order frequently with short intervals, the Institute will impose penalty on the tenderer, and the decision of the Institute in this regard will be final.

vi) The Comprehensive Maintenance Contract is nothing but extension of WARRANTY and includes all spares except consumables if any. The Tenderer has to necessarily ***enclose a list of consumables along with their prices***. The list is to be enclosed in the technical offer and prices are to be enclosed in the financial offer. If no such list is enclosed, the institute will not buy any consumables during warranty period and the Tenderer has to supply them at free of cost as part of warranty. **All items, irrespective of the nature which are not included in the list of consumables shall be deemed to be covered under warranty**.

(Signature of the Tenderer)

14. RECEIPT & INSTALLATION:

i) It shall be the responsibility of the Tenderer to fully cover all risks against direct damage and / or injury to our property and / or employees, as the case may be, occurring during installation, testing / tuning and commissioning of equipment to the extent caused by the negligence of your employees, agents or subcontractors. The Tenderer shall be responsible for disassembling of equipment / machines where necessary to facilitate their movement to the site and subsequent assembly and installation.

ii) It shall be the responsibility of the Tenderer to supply the needed accessories (internal/external), spares for testing, tuning & installation of the main equipment at free of cost.

iii) The Tenderer will depute specialized engineer / technician to supervise installation, check calibration of all concerned subsystems / components and conduct clinical testing and stabilize image quality, etc., before handing over the system to the satisfaction of SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES as fully commissioned.

Supply of equipment means Installation, testing, tuning and commissioning at site. No separate charges will be paid on this account.

15. DEMONSTRATION:

If necessary the firms should demonstrate their items of equipment at their own cost either at Sri Venkateswara Institute of Medical Sciences, Tirupati or at a nearby institute on specific requisition of this office within stipulated time. Failure to give demonstration may lead to rejection of the tender, at the discretion of SVIMS.

16. SUPPLY:

(a) Supplies should strictly confirm to the specifications mentioned in the order.

(b) The decision of the Director, Sri Venkateswara Institute of Medical Sciences, Tirupati shall be final regarding the acceptability of the equipment which is not confirming to the specification and other terms and conditions, supplied by the approved Tenderer and the Institute shall not give any reasons in writing or otherwise at any time after rejection of items.

17. Force majeure clause.

If the execution of the contract/supply order is delayed beyond the period stipulated in the contract/supply order as a result of outbreak or hostilities, declaration of an embargo or blockade, or fire, flood, acts of nature or any other contingency beyond the supplier's control due to act of God then Sri Venkateswara Institute of Medical Sciences, Tirupati may allow such additional time by extending the delivery period, as it considers to be justified by the circumstances of the case and its decision shall be final. If and when additional time is granted by Sri Venkateswara Institute of Medical Sciences, Tirupati , the contract/supply order shall be read and understood as if it had contained from its inception the delivery date as extended.

(Signature of the Tenderer)

a) The successful bidder will advise, in the event of his having to resort to this clause by a registered letter duly certified by the Local chamber of Commerce or Statutory authorities, the beginning and end of the causes of the delay, within fifteen days of the occurrence and cessation of such force majeure conditions. In the event of delay lasting out of force majeure SVIMS will reserve the right to cancel the contract and provisions governing termination of contract, as stated in the bid documents will apply.

b) For delays arising out of force majeure, the bidder will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of force majeure and neither SVIMS nor the bidder shall be liable to pay extra costs provided it is mutually established that force majeure conditions did actually exist.

c) If any of the Force majeure conditions exists in the place of operation of the bidder even at the time of submission of bid, he will categorically specify them in his bid and state whether they have been taken into consideration in their quotations.

18. Sri Venkateswara Institute of Medical Sciences, Tirupati reserves the right to give preference to the indigenous equipment over foreign equipment and go in for the indigenous equipment at any time before the acceptance of the tender.

19. Sri Venkateswara Institute of Medical Sciences, Tirupati shall have revocable right to purchase and to enter into parallel contract for the supply of any items mentioned in the tender schedule with any other supplier or firm at any rate at its discretion.

20. Sri Venkateswara Institute of Medical Sciences, Tirupati does not bind itself to accept the lowest offer or tender for any specific item or all items and reserves to itself the right to accept or reject any tender or all tenders without assigning any reason thereof.

21. Sri Venkateswara Institute of Medical Sciences, Tirupati reserves the right to cancel the tender for any or all equipment at any stage without assigning any reason thereof.

22. The termination and recovery of liquidated damages for failing to fulfill any of the terms and conditions of this contract, are as below:

In case the successful Tenderer back out after releasing the letter of intent or fails to deliver the equipment within the period, to be prescribed by the Director, Sri Venkateswara Institute of Medical Sciences, Tirupati at the time of placing orders, the tenderer will be liable to make good the loss sustained by the Institute in addition to the penalty as under.

(a) SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES shall be entitled to purchase the equipment or its substitutes from any other supplier or firm without notice to the contractor and to recover the extra cost thus involved in such purchase from the contractor.

(Signature of the Tenderer)

(b) If the delivery is not effected by the due date, the Director, SVIMS, Tirupati will have the right to impose penalty i.e. first extension for two months or part thereof at the rate of 2% and second extension for an additional two months or part thereof at the rate of 3%. Penalty for extension beyond this for an additional two months or part thereof shall be 4%.

(c) To cancel the contract or portion thereof.

(d) To withhold the EMD and /or Security Deposit to the extent of the loss incurred by the Institute, in the event of action being taken as above and if it falls short, the Sri Venkateswara Institute of Medical Sciences, shall be at liberty to recover the balance amount from any of the bills pertaining to the tenderer or by instituting a Civil Suit. In this regard, the Contractor shall not be entitled to any gain.

23. No suit with regard to any matter whatsoever arising out of this contract shall be instituted in any Court save a Court of Competent Jurisdiction at Tirupati , Andhra Pradesh or at the place of business of the tenderer. Further no claim shall lie against the SVIMS in respect of interest on Earnest Money Deposit or Security Deposit.

24. The following documents are necessary. VAT Registration, PAN copy, Authorisation Certificate and IEC if importer.

25. WARRANTY:

The warranty is must for 05 years and it starts from the date of installation only. **Warranty includes the main unit and all other items supplied**. When main unit or other items are found defective during warranty period, same needs to be rectified by repairing or replacing and make the system to good working condition at free of cost (including man power, parts needed, tax or duty) by the Tenderer. This warranty is subject to periodic preventive maintenance to be done by the Tenderer in consultation with the end-user.

26. UPTIME GUARANTEE:

The Tenderer has to keep the equipment at its utmost functional capacity i.e., 95% (ninety five percent) uptime in a calendar year. The period of non-functioning of the unit shall not exceed seven working days, and not more than three consecutive days at a time, in a year for a period of minimum ten years including warranty period.

Downtime penalty Clause

During the Guarantee / warranty period, desired uptime of 95% of 365 days (24 hrs) is to be maintained. If downtime exceeds 5% the Institute shall be entitled to impose penalty equal to an amount of 1% of the total cost of the equipment per day for the first seven days and shall be payable by the vendor which will be double on subsequent weeks along with extension of guarantee/warranty period by the excess down time period. The vendor must undertake to supply all spares for optimal upkeep of the equipment for at least TEN YEARS after handing over the unit to the Institute. If accessories/other attachment of the system are procured from the third party, then the vendor must produce cost of accessory/other attachment and the AMC from the third party separately along with the main offer and the third party will have to sign the AMC with the Institute if required.

(Signature of the Tenderer)

In no case the equipment should remain in non-working condition for more than 7days, beyond which a penalty of 2% of machine cost will be charged per day.

The principals or their agents are required to submit a **certificate** that they have satisfactory service arrangements and fully trained staff available to support the uptime guarantee.

27. Free software up-grades are to be provided during the period of WARRANTY and Comprehensive Maintenance Contract.

28. The Tenderer shall furnish an affidavit on Rs. 10/- non-judicial stamp paper stating that the firm has not been blacklisted by any government/Private institution and there is no vigilance/CBI/FEMA case pending against the firm/supplier.

29. Tenderers should clearly indicate the name of the Manufacturers/Beneficiary of the Letter of Credit, country of Origin, places of shipment.

30. FALL CLAUSE:

A) If, at any time, during the said period, the tenderer reduce the said prices of such Stores/Equipment or sales such stores to any other person/organization/Institution at a price lower than the chargeable, he shall forthwith notify such reduction or sale to the Director, Sri Venkateswara Institute of Medical Sciences and the price payable for the Stores supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

B) Successful Tenderers should give pre-alert intimation prior to shipment notifying both the nominated clearing agents as well as the Institute.

C) The tenderer shall furnish a list of organizations where the equipment, in question, has/have been supplied with the period during the last one year and performance certificate from such organization may also be provided.

31. TRAINING & SERVICE MANUAL:

a) The tenderer has to train SVIMS Bio-Medical Engineer for minor problems.

b) The Tenderer has to train SVIMS end user at site, if it is required.

c) The Tenderer has to provide the service manual at free of cost with **Schematic Diagram** of the machine to be supplied.

32. INSURANCE:

The Tenderer has to cover insurance policy, sea borne insurance as per strike cargo clause (all risks) and peril as per Institute strike, riots, civil commotions, war risks as per Institute clause from works of the Tenderer to the final destination SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, Tirupati, Andhra Pradesh, India including Installation, commissioning evidencing that the claims are payable in India. It will be the Tenderer responsibility to cover all risks against the direct damage and / or injury to our property and / or to our employees or to our agent, occurring during installation, testing, tuning and commissioning of the equipment.

(Signature of the Tenderer)

33. DELIVERY:

a) The consignment shall be booked in the name of The Director, Sri Venkateswara Institute of Medical Sciences, Tirupati – 517507, Andhra Pradesh, India.
b) The Tenderer has to specify the delivery period. The demurrage, storage and any other charges will be claimed from the Tenderer for the consignment that reaches without proper dispatch documents or not endorsed property and not accompanied by packing list invoices, errors or omissions by descriptions, weights or measurements and for increased handling charges, due to improper packing etc.

34. PAYMENT TERMS

Payment shall be made subject to recoveries, if any, by way of liquidated damages or any other charges as per terms & conditions of contract in the following manner.

A) Payment for Domestic Goods Or Foreign Origin Located Within India.

Payment shall be made in Indian Rupees as specified in the contract in the following manner:

a) On delivery:

90 % payment of the invoice amount shall be released on receipt of goods in good condition and upon the submission of the following documents:

(i) Four copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount;
(ii) Two copies of packing list identifying contents of each package;
(iii) Inspection certificate issued by the nominated Inspection agency, if any.
(iv) Insurance Certificate;
(v) Certificate of origin.
(vi) Manufacturer's/Supplier's warranty certificate

b) On Acceptance:

Balance 10 % payment shall be released subject to recoveries, if any, either on account of non-rectification of defects/deficiencies not attended by the Supplier or otherwise and satisfactory completion and commissioning to the satisfaction of SVIMS.

B) Payment for Imported Goods:

Payment for foreign currency portion shall be made in the currency as specified in the contract in the following manner, excluding Customs Duty.

Irrevocable & non – transferable LC shall be opened by the institute. However, if the supplier requests specifically to open confirmed LC, the extra charges would be borne by the supplier. If LC is required to be extended and/or amended for reasons not attributable to the purchaser/consignee, the charges thereof shall be borne by the supplier.

a) On Shipment:

Ninety (90) % of the net CIF price of the goods shipped shall be released upon submission of documents specified hereunder:

(Signature of the Tenderer)

(i) Four copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount;
(ii) Original and four copies of the negotiable clean, on-board Air-way Bill / Bill of Lading, marked freight pre paid and four copies of non-negotiable Air-way Bill / Bill of Lading;
(iii) Four Copies of packing list identifying contents of each package;
(iv) Insurance Certificate;
(v) Manufacturer's/Supplier's warranty certificate;
(vi) Inspection certificate issued by the nominated inspection agency, if applicable as per contract;
(vii) Manufacturer's own factory inspection report and
(viii) Certificate of origin issued by the chamber of commerce of the concerned country;
(ix) Certificate that the equipment is not refurbished

b) On Acceptance:

Balance payment of Ten(10) % of net CIF price of goods shall be released after successful installation subject to recoveries, if any. The Installation report is to be signed by both HOD and BME.

All the above certificates, shipping documents, equipment brochures, manuals, product, data catalogue etc., as enumerated should be sent to us by courier service so as to arrive in advance of the equipment consignment.

35. PACKING NORMS:

(a) All material must be strongly and securely packed in minimum cubic space for safe transportation / shipment in such a manner as to prevent damage and pilferage in transit, from the point of shipment to final destination.

(b) Metal parts wherever necessary shall be well slushed with preventives to prevent rusting in transit, or due to delay in Indian Port before clearing.

(c) The main equipment, accessories and documentation shall be separately packed and the cases / packages clearly marked accordingly.

(d) All timber used in the packing of the materials is to be free from bark, insects and fungi.

(e) Every case / package must contain a packing list in triplicate and order No., package No., Number of cases in the consignment. Description and quantity of each item packed shall be clearly shown in the packing list. The description and quantity of each item shall tally with that specified in the order, wherever applicable.

(Signature of the Tenderer)

(f) Each case shall be marked by paint in bold letters on Four sides indicating the following;

(i) THE DIRECTOR, SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI – 517 507, ANDHRA PRADESH, INDIA.

(ii) Case number, dimensions of the case gross and net weight in Kgs., and Country of Origin if any. (This information also should be communicated to us in advance).

(g) All spares and accessories shall be separately crated and labeled as **"SPARE PARTS".**

36. CRYSTALISATION : for the purpose of calculation of CAMC charges, in case if the item is quoted in Foreign currency, the currency conversion rate prevailing as on the date of opening of Price Bid only will be considered for all the years i.e. the amount in INR is fixed, it will not change as per the fluctuation of foreign currency conversion rate.

37. OPENING OF TENDERS:

Tenders will be opened in the presence of the Tenderers or their authorized representatives whoever chooses to be present at **3.00 p.m. on 26.10.2012** in the Committee Hall of the Institute. The Financial tenders will be opened after evaluation of technical tenders, at a later date.

N.B. If the above date is declared as holiday, the next working day shall be the due date for receipt of tenders.

I / We read and accept the above Terms & Conditions.

Place :

Date : (**Signature of the Tenderer)**

PROFORMA OF FAITHFUL & SATISFACTORY PERFORMANCE AGREEMENT

AN AGREEMENT made this the …….. Day of …….. Two thousand …….. Between M/s. …….. herein after called the Contractors, which expression shall unless excluded by or repugnant to the subject or context, include their successors, representatives, heirs, executors and administrators of the one part and the Director, Sri Venkateswara Institute of Medical Sciences, T.T.D., Tirupati (which expression shall unless by or repugnant to the subject or context, include his accessors in office and assigns) of the other part.

Whereas quotation dated ……. tendered by the contractor has been accepted by Sri Venkateswara Institute of Medical Sciences, TTD., Tirupati and LETTER OF INTENT No. …….. Dt. ……..
(herein after referred to as the said order, which expression shall include any amendment thereof, or additions or modifications thereto) has accordingly issued in favour of the contractors, setting forth in detail the specifications, quantity, price, delivery terms and the special conditions governing the supply.

AN AGREEMENT WITNESSETH AS FOLLOWS:

1. The contractors hereby agree to supply the stores strictly in accordance with the specification and as per approved sample(s) and all other terms and special conditions stipulated in the said order.

2. The contractors hereby further agree that the said order, together with the schedule, instructions and all special conditions shall be deemed to form part of this agreement as though separately set out herein and are included in the expression “contract” wherever used in connection with the said order.

3. The contractors agree that in all matters of disputes as regards the condition of supplies, after arrival at destination the decision of the Director, S.V. Institute of Medical Sciences, TTD., Tirupati shall be final and binding on the parties hereto.

4. The delivery period stipulated in the said order shall be deemed to be the essence of contract and the contractors hereby agree that the delivery period/date as mentioned in the said order, is guaranteed and in the event of S.V. Institute of Medical Sciences, TTD., Tirupati agreeing to accept supplies for such installment or for the entire quantity where no installment supply is stipulated, the contractors agree to pay to the S.V. Institute of Medical Sciences, TTD., Tirupati liquidated damages as described in the tender document without prejudice to the right of the S.V. Institute of Medical Sciences, TTD., Tirupati to exercise option under the said special condition for availing remedies available to the S.V. Institute of Medical Sciences, TTD., Tirupati under clause 5 hereof.

5. It is hereby further agreed between the parties hereto that failure on the part of the contractors to make supplies whether of a portion of the material or the entire quantity as per the terms of the said order, non-performance or non-supply in time regularly, or supply material which does not confirm to specifications, quality prescribed, or the samples approved, or which is found defective in any other way, or for the breach of any of the conditions stipulated either in the said order or in this agreement shall entitle enforcement of one or more of the following:

i) Cancellation of the said order in part or in whole.

ii) Forfeiture or adjustment of Earnest Money and/or security deposit (which may be in the form of bank guarantee or otherwise) in whole or to the extent considered necessary by the S.V. Institute of Medical Sciences, TTD., Tirupati and

iii) Recovery of extra cost, if any, incurred by S.V. Institute of Medical Sciences, TTD., Tirupati in procuring the materials from other sources by way of repurchase at the risk of expense of the contractors.

6. Whereas the contractor has desired the S.V.Institute of Medical Sciences, TTD., Tirupati to arrange 90% payment through their bank on presentation to the bankers copies of documents required as per the Purchase Order and the contractor binds himself for the description of the goods dispatched to correspond totally to the goods quoted. The balance 10% shall be paid after acceptance of the goods.

7. The contractor further binds himself for commissioning of equipment in the premises of the S.V.Institute of Medical Sciences, TTD., Tirupati.

8. Irrespective of the above payments, the contractor binds himself for satisfactory service and supply of necessary spares during the period of warranty.

9. Whenever under the terms of the said order, any sum of money is recoverable from and payable by the contractors, the S.V.Institute of Medical Sciences, TTD., Tirupati shall be entitled to recover such sum by appropriation, in part or whole, the Security Deposit deposited by the contractors. In the event of the security being insufficient or if no security has been taken from the contractors, then the balance or the total sum recoverable, as the case may be, shall be deducted from any sum then due, or which at any time thereafter may become due tot he contractors under the said order or any other contract with the S.V. Institute of Medical Sciences, TTD., Tirupati.

10. On due fulfillment of terms and conditions of this agreement by the contractors, the amount of Security Deposit herein before mentioned will be refunded after expiry of the guarantee / warranty period.

11. The contractor shall inform SVIMS about the change of local agent in India, immediately, if any such thing happens. In such a event it shall be the responsibility of the contractor / manufacturer / principal to see that the new agent agrees for all the terms and conditions as mentioned in the purchase order especially with reference to free supplies, warranty period and AMC charges.

12. The contractors hereby further agree that no suit in regard to any matter whatsoever arising under or by virtue of this agreement shall be instituted in any court save a court of competent jurisdiction at Tirupati , Andhra Pradesh, India or at the place of business from where the tender is quoted by the contractor.

13. CLEARANCE :
Demurrage, storage and any other charges will be claimed from you or from your principal for all shipments that reach us without proper dispatch documents or not endorsed properly and not accompanied by packing list, invoices, errors or omissions by descriptions, weights or measurements and for increased handling charges, due to improper packing.

14. RECEIPT & INSTALLATION OF EQUIPMENT :

a) should any deficiencies be established after receipt of the equipment, these must be made good by despatch under “No Charge” invoice. Any complaints in regard to materials will be notified within 90 days of receipt of consignment in our premises and any defective materials will be returned at your risk and cost and you should replace them with new goods/materials and deliver the same at free of cost including insurance, freight and customs duty. The port of entry shall be Chennai only.

b) It shall be your responsibility to fully cover all risks against direct damage and/or injury to our property and/or employees occuring during installation, testing/tuning and commissioning of equipment to the extent caused by the negligence of your employees, agents or sub contractors. You shall be responsible for this disassembling of equipments/machines, where necessary to facilitate their movement to the site and subsequent assembling and installation.

15. TRAINING FACILITY:
The contractor shall provide training as per the Purchase Order.

16. MANTENANCE & PENALTY CLAUSE:
a) All the breakdowns shall be attended within 24 hours. The period of procurement of spares which are available locally, shall not exceed 3 days and which are not available locally, shall not exceed 7 days.

b) In the event, break down call is not attended within 24 hrs. or non-functioning of equipment exceeds the permissible period as mentioned in the Purchase Order, you have to extend the period of warranty / AMC period by 5 days for every one single day or you have to pay suitable compensation as decided by SVIMS. If the equipment is unattended within 24 hours / equipment is down continuously for 7 days or if the equipment is going out of order frequently with short intervals, the institute will withhold the security deposit and if it is not sufficient the excess amount will be claimed from you, and the decision of the institute will be final.

17. WARRANTY:
The main equipment and other accessories supplied carries a warranty of 05 years from the date of installation.

18. AMC CHARGES :
a) you have agreed to provide post warranty comprehensive Annual Maintenance Contract for 05 years at the rates specified in the Purchase Order.

b) The maintenance contract will be applicable for a period of 05 years after expiry of warranty period.

c) During AMC you have to attend 4 nos. of maintenance calls and unlimited no. of break down calls.

d) The AMC amount will be paid in two installments i.e. 50 % in advance and balance after successful completion of the AMC period.

e) During comprehensive AMC period you have to bear the customs duty. No other costs will be borne by SVIMS including Service Tax.

f) It is the responsibility of the tenderer for getting the servicing from the original manufacturer for third party items during warranty and AMC period.

19. POST SALE PRODUCT SUPPORT:
a) you shall continue to support the equipment supplied by making available spare parts and assemblies of the equipment for a period of 10 years from the date of commissioning.

b) In the event of change of local agent by your principal, either your principle or his new agent has to continue the post sale services as per terms and conditions of the Purchase Order.

c) Should your principle decide to discontinue the product, for any reasons whatsoever, adequate notice shall be given to us to enable us to procure the requisite life time spares.

20. During warranty replacements, Institute will not bear any cost including customs duty.

21. CRYSTALISATION : for the purpose of calculation of CAMC charges, in case if the item is quoted in Foreign currency, the currency conversion rate prevailing as on the date of opening of Price Bid only will be considered for all the years i.e. the amount in INR is fixed, it will not change as per the fluctuation of foreign currency conversion rate.

IN WITNESS WHEREOF the Contractors have here up to set their hand and the S.V. Institute of Medical Sciences, TTD., Tirupati has caused ……
For and on his behalf to set his hand hereunto, the day and year first above written.

Manufacturer's Signature Contractor`s Signature

Signed by the said contractors
In the presence of:

1st Witness
Address and occupation

2nd Witness
Address and occupation

Signed by Dr. B. Vengamma, Director, the Sri Venkateswara Institute of Medical Sciences, TTD., Tirupati for and or behalf and by the order and direction of the Governing Council of the Sri Venkateswara Institute of Medical Sciences, Tirumala Tirupati Devasthanams, Tirupati, Andhra Pradesh.

Signature of the Director
Sri Venkateswara Institute of Medical
Sciences, TTD., Tirupati.

PROFORMA OF PERFORMANCE SECURITY FORM (BANK GUARANTEE)

To
The Director , Sri Venkateswara Institute of Medical Sciences

Whereas……. (name and address of the supplier) (hereinafter called "the supplier") has undertaken, in pursuance of contract No……..dated…….. to supply (description of goods and services (hereinafter called "the contract"). And whereas it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with its obligations in accordance with the contract.

And whereas we have agreed to give the supplier such a bank guarantee.

Now therefore we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of ……..…….(amount of the guarantee in words and figures), such sum being payable in the types and proportions of currencies in which the contract price is payable, and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

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

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

This guarantee shall be valid until the date of issue of the 'Acceptance Certificate' issued by the purchaser's representative.

Signature and seal of the Guarantor

Place

Date

PRICE SCHEDULE

A) PRICE SCHEDULE FOR DOMESTIC GOODS OR GOODS OF FOREIGN ORIGIN LOCATED WITHIN INDIA

1	2	3	4	5							6
Schedule	Brief Description Of Goods	Country Of Origin	Quantity (Nos.)	Price per unit (Rs.)							Total Price at Purchaser's Site (Rs.)
				Ex-factory/ Ex-warehouse /Ex-showroom /Off-the shelf	Excise Duty (if any) (% & value)	Sales Tax / CST / VAT/ CENVAT (if any) (% & value)	Packing and forwarding Charges	Inland Transportation, Insurance loading / unloading and Incidental costs till Purchaser's site	Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training) at the Purchaser's site	Unit Price at Purchaser's Site	
				(a)	(b)	(c)	(d)	(e)	(f)	(g) =a+b+c+d+e+f	4x5(g)

Total Tender price in Rupees : _____

In Words *:* _____

Note :-

If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.

The charges for Annual CMC after warranty shall be quoted separately (Price Schedule C)

Signature of Tenderer _____

Name _____

Business Address _____

Seal of the Tenderer _____

Place : _____

Date : _____

PRICE SCHEDULE

B) PRICE SCHEDULE FOR GOODS TO BE IMPORTED FROM ABROAD

1	2	3	4	5					6
Schedule	Brief Description Of Goods	Country Of Origin	Quantity (Nos.)	Price per unit (Currency)					Total Price at Purchaser's site
				FOB price at port / airport of Loading (a)	CIF price at port / airport of entry (b)	Loading / Unloading, Inland transportation, Insurance and Incidental costs till Purchaser's site (c)	Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training) at the Purchaser's site (d)	Unit Price at Purchaser's site e= a+b+c+d	4x5(e)

Total Tender price in foreign currency _____

In Words : _____

Note :-

If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.

The charges for Annual CMC after warranty shall be quoted separately (Price Schedule C).

The Tenderer will be fully responsible for the safe arrival of the goods at destination (Purchaser's site) in good condition as per INCOTERMS, if applicable

Custom Duty with CDEC & NMIC if applicable ___% of CIF value

Signature of Tenderer _____

Name _____

Business Address _____

Seal of the Tenderer _____

Place : _____

Date : _____

PRICE SCHEDULE

C) PRICE SCHEDULE FOR ANNUAL COMPREHENSIVE MAINTENANCE CONTRACT AFTER WARRANTY PERIOD

1	2	3	4					5
Schedule No.	BRIEF DESCRIPTION OF GOODS	QUANTITY (Nos.)	Annual Comprehensive Maintenance Contract Cost for Each Unit year wise in INR•					Total Annual Comprehensive Maintenance Contract Cost for 5 Years [3x(4a+4b+4c+4d+4e)]
			1st	2nd	3rd	4th	5th	
			a	B	c	d	e	

- After completion of Warranty period

NOTE :-

1. In case of discrepancy between unit price and total prices, THE UNIT PRICE shall prevail.
2. The cost of Comprehensive Maintenance Contract (CMC) which includes preventive maintenance including testing & calibration as per technical/service/operational manual, labour and spares, after satisfactory completion of Warranty period may be quoted for next 5 years on yearly basis for complete equipment and Turnkey (if any).
3. The cost of CMC may be quoted along with taxes applicable on the date of Tender Opening. The taxes to be paid extra, to be specifically stated. In the absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.
4. Cost of CMC will be added for Ranking/Evaluation purpose.
5. The payment of CMC will be made as per clause GCC clause 21.1 (D).
6. The uptime warranty will be 95% on 24 (hrs.) X 365 (days) basis.
7. All software updates should be provided free of cost during CMC period.
8. The stipulations in Technical Specification will supersede above provisions.
9. The supplier shall keep sufficient stock of spares required during Annual Comprehensive Maintenance Contract period. In case the spares are required to be imported, it would be the responsibility of the supplier to import and get them custom cleared and pay all necessary duties.

Signature of Tenderer _____
Name _____
Business Address _____
Seal of the Tenderer _____

Place : _____
Date : _____

SVIMS EMBLEM

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
TIRUPATI
(TIRUMALA TIRUPATI DEVASTHANAMS)

LORD BALAJI

Phone Nos. – 0877-2287777 Extn. – 2223/2224 Fax No. 0877-2286803/2286116
E-mail : svimshosp@yahoo.com

TENDER NOTICE

Sri Venkateswara Institute of Medical Sciences, Tirupati invites sealed tenders under two bid system from manufacturers and distributors for supply of the following equipment :

S.NO.	NAME OF THE EQUIPMENT	QTY.	TEND. DOC. COST	EMD AMOUNT
1.	LINEAR ACCELERATOR	01	Rs. 2000/-	Rs. 37,50,000/-

Tender forms with details can be had from the Assistant Director (P) by paying the above mentioned cost by way of Demand Draft or can be downloaded from this website and the tender cost is to be enclosed in the Technical bid along with EMD. The Demand draft should be in favour of "The Director, Sri Venkateswara Institute of Medical Sciences, Tirupati". The sealed tenders shall invariably be sent to the Assistant Director (P), SVIMS, Tirupati – 517 507, so as to reach on or before 2.30**p.m. on 26.10.2012.** Tenders will be opened at **3.00 p.m. on 26.10.2012.**

The Director reserves the right to reject any or all tenders without assigning any reason whatsoever for any or all equipment.

Roc. No. P1/19/e-procurement/PD/SVIMS/10, dt. 27.09.2012 **DIRECTOR**

TECHNICAL SPECIFICATIONS FOR HIGH ENERGY LINEAR ACCELERATOR SUITE WITH MLC, IMRT, SRS & SRT CAPABILITIES, TREATMENT PLANNING SYSTEM

Mandatory Requirements

1. The quoted model should be FDA approved.
2. The quoted model should have been type approved by AERB.
3. FDA & AERB Type approval certificates should be enclosed with the bids.

General Requirements

1. The vendor may quote multiple models if satisfying the specification.

2. The company supplying the unit should be a reputed one with at least 5 similar units already installed and functioning in the country. Customer reports issued by reputed hospitals should be enclosed.

3. **The IMRT unit quoted in the main offer should have a modular feature and should be upgradable to the kV-based IGRT capability .**

4. The same should be quoted as V-MAT based IGRT capability.

The following features should also be part which should include add on type:

- **MLC 3mm or less for SRS & SRT capabilities with treatment planning system and accessories.**
- **MLC may be add-on or integrated with Linear Accelerator.**
  In case the vendor is providing only integrated MLC with leaf size 3 mm or less, kindly state if there are any field size restrictions for regular IGRT and IMRT treatment as well as for SRS and SRT also state the solution you have to overcome the same.
- **Upgrades include all H/w, S/w and necessary permanent licences for their successful working and the vendor should demonstrate and commission these features.**
- **The Add on MLC/integrated MLC offered should have at least 5 similar units working / Supplied in India (copy of the user list must be enclosed).**

TECHNICAL SPECIFICATIONS FOR HIGH ENERGY LINEAR ACCELERATOR SUITE WITH MLC, IMRT AND SRT CAPABILITIES

The dual mode medical linear accelerator should be able to perform various specialized treatment techniques such as:

1. Three Dimensional Conformal Radiotherapy (3D CRT)
2. INTENSITY MODULATED RADIATION THERAPY (IMRT)
3. Photon Arc Therapy
4. The quoted LINAC should be upgradable to IGRT and VMAT.

Hence, the Linear Accelerator should be the latest, upgradeable, multimodel, Dual with third optional photon energy with multiple electron energies with the following minimum technology requirements:

- Klystron / Magnetron as the RF power source
- Demountable gridded electron gun for cost effectiveness.
- Sealed Ionization chambers for stable and accurate output is preferred
- In case open to air ion chamber is offered by the manufacturer, then special 10 years warranty should be offered for both photon & electron ion chambers.
- Single or hypo fractionated treatments should be possible (software upgrades).
- Intensity-modulated radio-surgery for brain and spinal tumors facility should be available
- The system should enable sub-millimeter accuracy treatment
- IMRT treatment execution should be possible with the following modes: multiple static step and shoot fields, dynamic MLC fields, IMAT.
- The features in the LINAC should be upgradable to advanced features like VMAT in single rotation.
- Advanced features, available now, should be quoted separately as optional.

1. PHOTON BEAM CHARACTERISTICS

1.1. **Beam Energies**

The accelerator shall be capable of producing dual with third optional clinically useful photon beams with energies:

- 6 MV and 15 MV mandatory with optional third energy being either 4MV or 10 MV

The minimum characteristics of 6 MV and 15 MV beams for a 10 x 10 cm^2 field at 100 cm TSD should be as follows:

Nominal Energy (MV)	D_{max} (cm)	% Depth Dose at 10 cm Depth (10 cm x 10 cm field)
6	1.5 ± 0.2	67.0 ± 2.0
15	3.0 ± 0.2	78.0 ± 2.0

The beam characteristics for the above shall be acceptable to Indian Regulatory Agency AERB and shall have type approval for use in India.

The above characteristics, for the energies (dual with third optional photon energy) quoted, should be specified.

1.2. **Dose Rate and Beam Stability**: The maximum dose rate for routine clinical applications shall **at least** be **600 monitor units (MU)/** minute for a 10 cm x 10 cm field at D_{max} at a TSD of 100 cm for both photon beams. Higher dose rate of about 600 MU/min or more for all MV Energies will be preferred.

1.2.1. **Reproducibility with Energy:** Precision of the dosimetry measurement system for each energy should be ±1% or ±1MU, whichever is greater, at a fixed dose rate

1.2.2. **Reproducibility with Dose vs. Dose Rate:** The dose rate dependence of the dosimetry system with variations in dose rate from minimum to maximum is less than ±1% or ±1MU.

1.2.3. **Reproducibility of Dose vs. Gantry Angle:** The precision of the dosimetry system is ±1.5 % at any gantry angle from 0 to 360 degrees.

1.3. **Field Size Specifications**

The field size is defined as the distance along the radial and transverse axes between the points of 50% density on an x-ray film taken at 100 cm TSD with buildup. The digital display, light field size and mechanical display should be accurate to within ±1 mm.

1.3.1. The accelerator shall provide a continuously variable rectangular, unclipped field size from 1cm x 1 cm to 35 cm x 35 cm at 100 cm SSD. The maximum clipped field size should equal or exceed 40 cm x 40 cm at 100 cm SSD. Clipped corners are unacceptable for fields smaller than 35 cm x 35 cm.

1.3.2. A detachable block holder should be provided to accommodate 2 trays simultaneously for wedges and block trays. The size of the blocking trays should be at least 5 cm larger than the maximum field size at the lower position. Specify location and size of blocking trays.

1.3.3. **Asymmetric Collimation**

One set of jaws shall be capable of crossing the centre line by at least10 cm as projected at 100 cm TSD. The collimators shall re-centre automatically when the symmetrical mode of operation is re-selected.

1.4. **Beam Profile**

1.4.1. Field Flatness Specification

Flatness is defined as the maximum variation from the mean x-ray dose delivered within the central 80% Full Width Half Maximum (FWHM) region measured at 100 cm TSD at a depth of 10 cm. The mean is the average of the maximum and minimum points within the central 80% FWHM region. The flatness shall not exceed ±3%. This applies to both the radial and transverse axes of all square field sizes from 10 x 10 cm^2 to 40 x 40 cm^2. The maximum variations for the above field sizes for both energies to specify

1.4.2. **Field Symmetry Specifications**

Symmetry is defined as the maximum difference between the X-ray dose delivered to any two points which are equidistant and symmetrical about the central axis and within the central 80% FWHM region measured at 100 cm TSD at a depth of 10 cm. The symmetry shall be within 2% for both radial and transverse axes of all square field sizes from 10 x 10 cm^2 to 40 x 40 cm^2 and for gantry angles 0, 90, 180 and 270 degrees. The maximum variations for the above field sizes for both energies to specify .

1.5. **Mechanical and Motorized/ Dynamic/ Virtual Wedges**

1.5.1. **Mechanical wedges**: A minimum of 4 fixed universal type physical wedges with nominal wedge angles 15, 30, 45 and 60 degrees, suitable for both energies with treatment field sizes at 100 cm SSD as 20 cm x 40 cm for 15, 30 and 45 degrees wedges and 15 cm x 40 cm for the 60 degree wedge.

1.5.2 Motorized/Enhanced Dynamic/Virtual Wedge: The machine shall have in-built automated computerized wedge that can produce effects of any wedge angle up to 60 degree.

1.6. **Radiation Leakage**

Radiations (Photon and Neutron) leakages shall be within the acceptable limits prescribed by various international guidelines for the Medical Linear Accelerators.

1.6.1. **Photon Leakage**: The photon leakage rate at any point one meter from the target outside the cone defined by the primary x-ray collimator shall be less than 0.1% of the absorbed dose at the isocenter.

1.6.2. **Collimator Transmission**: The movable collimators shall not permit transmission of radiation exceeding 0.5% of the central axis dose at D_{max} measured in air for both photon energies.

1.6.3. **Neutron Leakage:** The neutron leakage rate should not exceed 0.15% expressed in neutron dose equivalent (REM) when added to the photon leakage for a 10 x 10 cm^2 field at the isocenter at any point one meter from the target when the jaws are closed. **It is the responsibility of the bidder to do neutron leakage tests and other tests prescribed by the AERB in future, and same has to be done every year / as and when required by the customer / AERB at the bidder's own expenses**.

1.6.4. In addition to the above requirements for radiation leakage, the LINAC should also meet all the mandatory safety and radiation leakage as specified by the Atomic Energy Regulatory Board, Mumbai, India in its report "Acceptance / QA Tests for Medical Linear Accelerators".

1.6.5. Specify all Beam-Off Interlocks

1.7. **Photon Arc Therapy**

1.7.1. Bi-directional conformal arc therapy should be included with Automatic calculation of Dose per degree based on the Dose Rate selected and the Arc angle set.

2. ELECTRON BEAM CHARACTERISTICS

2.1. **Electron Beam Energies.**

Six or more clinically useful electron beam energies shall be provided viz. 6, 8, 9, 10 12, 15 18 MeV. Energy shall be specified as the most probable energy (Ep) of the electron energy spectrum at 100 cm from the accelerator exit window.

2.2. Dose Rate

The dose rate at the isocenter shall not be less than 600 MU/minute for each electron energy. Higher dose rate for all energies are preferred. Please quote higher dose rates separately.

2.3 Field Size

The electron beam size is defined by the inside dimensions of the electron beam applicators projected geometrically to a plane surface at 100 cm SSD. A range of field sizes from 4 x 4 cm^2 to 25 x 25 cm^2 is required. A method to obtain irregular field shapes shall be provided.

2.3.1 It shall be possible to visualize both the field defining light and the optical distance indicator with an electron applicator in place.

2.3.2 Please offer complete set of electron applicators (5 nos or more), for various field sizes including custom aperture fabrication hardware for electron applications.

3. **ACCESSORIES:** Please offer the following accessories for the LINAC:

3.1.1. **Collimator mount accessories:**

3.1.1.1. Interface Mount

3.1.1.2. Electron Arc Applicators and Mold Frames

3.1.1.3. 4 wedges set: 15, 30, 45 and 60 degrees or auto wedge to be provided

3.1.1.4. Additional Beam Block Tray sets: both solid and slotted-starburst pattern- (with crosshair scribed in center of tray) for use with & without MLC. Should include coded trays for use with verification systems.

3.1.1.5. Separate low (6 MV) and high energy (15 MV) beam pre-shaped block systems

3.1.2. Compensator Mount

3.1.3. Upper and Lower Compensator Trays

3.1.4. Accessory mount

3.1.5. Port film graticule

3.1.6. Adequate spare parts should be kept in the department (as the maintenance of the linac comes under warranty it is the responsibility of the bidder to keep adequate number of spare parts to avoid imposing penalty). A complete set of extended spare parts shall be supplied/ made available at the end of 10^{th} year, i.e., when the warranty & CAMC get over.

3.1.7. Stereotactic motion disable kit for treatment table and gantry

3.1.8 Collision detection system for the collimator, so that automatic field treatments can be carried out without any hindrance.

3.1.9. Please offer QA software for quality assurance module for Linear Accelerator including static& dynamic MLC using state of art Dynalog analysis software. The software tool for automation of quality assurance data acquisition, data analysis and reporting should be included.

3.2. **Beam Profile (for electron beams**)

3.2.9. Field Flatness

Flatness for electron beam field is defined as the maximum variation from the mean electron ionization within the central 80% FWHM region. The mean is the average of the maximum and minimum points within the central 80% FWHM region.

The maximum percent variation of the electron intensity at 100 cm SSD at D_{max} shall not exceed 5% (within the central 80% of the longitudinal and transverse axes relative to the central axis) for the field sizes from 10 x 10 cm^2 to 25 x 25 cm^2 and for all the electron beam energies.

3.2.10. Beam Symmetry

Symmetry is defined as the maximum difference between the ionization delivered to any two points that are equidistant and symmetrical about the central axis and within the central 80% FWHM region.

The maximum percent variation in the average electron intensity to the longitudinal and transverse halves of the electron field at Dmax for a 10x 10 cm^2 to 25x25cm^2 fields at 100 cm SSD shall not exceed ±2% at gantry angles of 0, 90, 180 and 270 degrees. The average electron intensity is the average of the maximum and minimum points within the central 80% of the field for each of the axes.

3.3. X-ray Contamination

The x-ray contamination of the electron beam shall be less than 5% of the maximum dose for all energies specified previously.

3.4. **Total Skin Electron Irradiation Mode**: A high dose rate electron mode for total skin electron irradiation must be provided with a minimum dose rate of 2500 MU / minute or above at Isocenter for the 6 MeV electron beam

.

3.5. **Arc Electron mode and Total body electron mode** should be provided and quoted. All accessories required should be quoted.

4.0 OTHER SPECIFICATIONS

4.1 TAD, Isocenter accuracy and digital displays:

4.1.1. The target to axis distance should be 100 ± 0.2 cm. The isocenter shall lie within a sphere of radius 1 mm.

4.1.1 The accelerator gantry shall be capable of rotation equal to or greater than 360 degrees with a variation of the mechanical and radiation isocenter during entire rotation shall be within ±1mm.

4.1.2 Digital scales indicating gantry angle position, collimator angle and the field size shall be provided both in treatment room and at the control console. Accuracy of the scales shall be ± 0.5 degree.

4.1.3 The distance from the end of the lower collimator to the isocenter shall be greater than 45 cm. The bottom of the blocking tray should be greater than 30 cm from the isocenter.

4.1.4 The height of the isocenter above the finished floor shall be less than 135 cm.

4.1.6 A complete set of pre-shaped beam blocks shall be provided.

4.2 **Treatment Couch (with indexed carbon fiber table top**)

4.2.1 The couch should be designed for use in IMRT, IGRT, SRT, SRS treatments.

4.2.2 Should be made of carbon fiber and free of metal and other artifact-creating materials.

4.2.3 Should support patient weighing 200 kg or more , and deflection should be < 4 mm

4.2.4 Emergency off buttons should be available on both sides of the couch.

4.2.5 Should have two hand pendants that control both LINAC and Couch adjustments and motions.

4.2.6 Full range of vertical, horizontal, lateral, tabletop and couch rotational motions of the treatment couch should be specified. The accuracy of all the scales including digital scale displays shall be less than ± 1 mm for linear motions and 0.5˚ for rotational motions.

4.2.7 The maximum height of the couch shall be at least 40 cm above the isocenter. The lowest couch position shall be less than 63 cm above the finished floor. (To match with the existing simulator with carbon fibre table top couch in the department)

4.2.8 Should have side panel controls to adjust all couch motions and should have switches for wall and back pointer lasers, as well as room, field and range-finder lights.

4.2.9 Convenient digital display of scales in metric units shall be incorporated on the couch or on an in-room monitor that will allow the operator to check the orientation of the couch height and couch angle with respect to the gantry. Accuracy should be as indicated in 3.2.6.

4.2.10 Should be fully compatible and mountable with immobilization accessories for accurate patient positioning

4.2.11 Should be provided with grab handles for easy manual motion.

4.2.12 The couch top shall have removable side rails, with attached universal clamps and immobilization straps for head shaped detachable attachment to avoid couch interference while treating Head and Neck cases. Patient support panels in the couch (tennis racket or Mylar) shall be provided to facilitate large posterior treatments at extended distances without moving the patient.

4.3 Treatment Room (In-room) and Console Position Displays

For accuracy and faster execution of patient setup, the following digital displays should be available both in treatment room and at the operator console panel: collimator jaw settings (both symmetric and asymmetric), gantry rotation angle, collimator rotation angle; treatment couch vertical, lateral and longitudinal positions, couch rotation angle about isocenter. Accuracy of collimator and gantry angle displays shall be ± 0.5 degree, with a resolution of 0.1 degree. Accuracy of collimator jaw position displays shall be ± 1 mm with a resolution of 1 mm. Accuracy of the couch vertical, lateral and longitudinal displays shall be ± 2 mm with resolution of 1 mm.

4.4CCTV Camera System

Two Camera CCTV systems with colour monitors in the control console for monitoring patient activity inside of the treatment room should be quoted.

Patient Summoning System or patient calling system to be operated from LAs, Simulators, consulting rooms to the patient waiting area.

4.5 Patient Intercom System

The patient Intercom system for two way audio communications with the patient in the treatment room from the treatment console area should be quoted.

4.6 MLC – Multi Leaf Collimator

4.6.1The MLC system quoted shall have 80 leaves or more. The resolution of the MLC leaves (leaf width) at isocenter shall be 10 mm or less. The over travel distance of the MLC leaves shall be at least 12 cm or more.

4.6.2MLC offered should be capable of performing the following treatment techniques:

4.6.1.1 Step-and-shoot IMRT or Dynamic IMRT

4.6.1.2 ARC IMRT (ARC MLC)

4.6.1.3 Volumetric IMRT

4.6.1.4 Large field IMRT for maximum available IMRT fields to be delivered in a single plan field should be specified.

4.6.1.5 Speed of the MLC leaves should be specified.

4.6.2.6 Number of MLC pairs offered should be specified

4.6.2.7 The MLC should have the maximum field size of 40 x 40 cm^2.

4.6.2.8. The MLC should provide efficient beam shaping for 3D conformal radiotherapy, static & dynamic and conformal arc modes.

4.6.2.9 MLC leaf should retract to allow conventional techniques and interdigitate for IMRT treatments.

4.6.2.10 When MLC is under repair, LINAC should still be usable to treat routine conventional treatments.

4.7 **Portal Imaging (Electronic Portal Imaging System)**

The Electronic Portal Imaging Device [EPID] - MV imaging system that allows for verification of patient setups, treatment portals and pre-treatment QA - with the following features should be part of the LINAC unit:

4.7.1 Shall be based on amorphous silicon (aSi) flat panel detector technology

4.7.2 Should be capable of producing images with any photon energy

4.7.3 Active imaging area of at least 40 cm x 30 cm with a pixel resolution of 1024 x 1024 or more

4.7.4 Should be lightweight, motorized and with retractable arm to position and hold the detector.

4.7.5 PC with 21" LCD colour monitor for acquisition and viewing to be the part of the system.

4.7.6 The portal imaging should be fully integrated with LINAC and IGRT

4.7.7 Image capture should be possible at all gantry angles.

4.7.8. The retractable arm of the detector should be of robotics type and remote controlled.

4.7.9 The portal imaging system should have software for setup verification with simulator images and TPS-DRR images and should have evaluation tools to determine systemic and random errors.

4.7.10. Match and Review software should be included for image analysis.

4.8. LASERS (Laser Alignment System)
The vendor shall quote 4 green LAP lasers (two side-wall lasers, one ceiling laser and one sagittal laser).

4.9 IMRT Capabilities: Delivery software for the following IMRT treatment techniques should be included.

4.9.1 Step and shoot IMRT (Static IMRT) or Dynamic IMRT

4.9.2 ARC IMRT or Volumetric IMRT

5 <u>Oncology information / treatment record and verify (R&V) system with Auto Field Sequencing (Networked Radiotherapy Information System)</u>

5.1 The vendor shall provided a comprehensive oncology information & image management and treatment record & verify system. The system shall assist in the integration of radiotherapy patient data throughout the Institute as necessary which includes linear accelerators, CT-Simulator, treatment-planning systems, MRI, CT scans & PET-CT. It shall also record and verify treatment parameters of patients undergoing treatment on the LINAC(s). The system shall be based on one comprehensive database, thereby eliminating the need for redundant entry of data used in different applications.

5.2 The OIS / R&V system shall provide the following functions: Record and Review Patient Diagnoses; Plan a course of treatment in advance so that treatments are readily delivered when the patient arrives; Write RT prescriptions that detail treatment techniques, fractions, and dose; Define treatment fields; Link setup fields and notes to treatment fields; Setup notes can include photos that show how to set up the patient; Track dose to specific sites; Define site breakpoints with instructions that appear when the breakpoint will be exceeded; Store treatment plan information to avoid redundant and time-consuming data entry.

5.3 MLC user operation shall be accomplished entirely through the Networked Information System, thereby eliminating the need for a separate control station for the MLC. Planned leaf shapes shall be incorporated directly into a patient's planned treatment field(s) in the electronic Chart.

5.4 The MLC shape shall automatically appear on the Networked information system treatment screen during the setup and treatment of any patient with a planned MLC shape. The shape shall be displayed simultaneously with all other pertinent treatment parameters.

5.5 The system shall have the capability of storing patient photos facilitating correct treatment. The digital patient photographs should upload to the database. After treatment of the first field, all subsequent fields shall be automatically and sequentially downloaded to start auto-setup of the next field without requiring operator interaction at either the Networked information system console or In-Room Monitor.

5.6 Port images shall be capable of being planned ahead for appropriate treatment sessions, completed with prompting from the system, and automatically recorded in the electronic chart. Portal dose shall be capable of being accumulated, if desired. The system shall permit override of individual treatment parameters (couch longitudinal for example) and require a password and appropriate user rights to successfully complete the override.

5.7 The record and verification station shall accept and store demographic data, notes or comments and diagnostic information for each radiotherapy patient. When the patient proceeds with tumor localization, treatment planning and simulation, the treatment parameters will also be entered into the patient's file automatically or manually.

5.8 A daily patient schedule and time management schedule must be capable of being displayed on the computer monitor at the record and verify workstation. This schedule shall include, at a minimum, the scheduled treatment time for each patient, the patient's identification number and the patient's name. The schedule shall be used to select a patient for treatment on the accelerator.

5.9 The OIS system shall be capable of maintaining a record of field-specific and treatment-specific daily and cumulative doses for the target site and additional sites of interest. It shall be possible to specify a prescribed dose for each treatment site for every patient. The system shall prevent treatment if this dose will be exceeded upon completion of the treatment. A manual override shall be provided. Overriding prescribed dose limits by unauthorized personnel shall not be permitted. After the daily irradiation of a patient, the therapy history will be updated and the given target doses, or doses calculated to other sites, shall be accumulated.

5.10 The Operating System shall provide a convenient and efficient means for the user to generate and to print hard copy reports of information contained in the database.

5.11 The scheduler of the Networked radiotherapy information system should be capable of maintaining schedules for multiple departments and scheduling any resource desired by the site. It should have a graphical user interface for ease of customizing schedule views, changing appointment times and minimizing keystrokes.

5.12 The system shall provide the capability to integrate simulation, CT, MRI, PET and electronic portal imaging system images into the OIS database to provide a readily available reference during the patient's course of treatment. Reviewing images immediately after acquisition from a remote location shall be permitted. The system shall provide the additional feature of managing drug administration to patients.

5.13 The Hardware should consist of the following: Two separate, but fully integrated servers, with one fixed and one floating license one each for data management and image management with back up with 120 GB **or more** capacity or more to handle our busy department workload; 6 additional Image Workstations with two fixed and two floating licenses for contouring & Review and Approval; a latest 5 mega pixel digital camera (lithium ion battery with at least 1 GB memory card) for acquiring patient photos; a networked color image DICOM laser printer; capability for high speed internet connectivity for Online Service support. A camera having capable of taking both still as well as motion picture having latest configurations should be supplied including DVD drives and DVDS for backup.

5.14 **Connectivity**: DICOM RT interface application to support transfer of images and plan data using industry-standard protocol DICOM full support for DICOM RT, DICOM 3. Necessary Permanent DICOM licences should be offered. DICOM RT should support the following:

5.14.1 RT IMAGE,
5.14.2 RT PLAN (including Dynamic MLC and prescription MU),
5.14.3 RT STRUCTURE SET,
5.14.4 RT DOSE,
5.14.5 RT TREATMENT RECORD,
5.14.6 RT TREATMENT SUMMARY RECORD,
5.14.7 DICOM RT PRINT.etc.

6 NETWORKING: OVERALL

6.1 In addition to the clause 5 above, the offer should include for complete networking between the offered High Energy Linac, HDR Brachytherapy suite, CT-Simulator system, CT Scans, MRI & PET CT in INSTITUTE, 3-D TPS and other workstations in this offer. In addition to that the networking should be established and demonstrated to the existing facilities in the department (existing units are listed in clause 6.2). It is just not enough to declare the feasibility of complete networking, but the offer should be for establishing the network and demonstrating it to the customer's satisfaction. All licenses required for comprehensive networking should be permanent ones, including DICOM 3, DICOM-RT, DICOM RT PRINT and other image export and import facilities. Offer should include all s/w and h/w required to successfully establish this networking. The requirements in this clause are mandatory and should be clearly indicated in both technical and financial bids. **Internet broadband connection should be included in this offer for remote servicing** of LINAC, TPS, Brachytherapy unit, CT-Simulator, etc. Two Laptops with Windows OS and MS Office should be supplied.

- **As noted in the clause 6.1, the following equipment that are already installed in the institute should also be included in the network, including DICOM networks. All the software and hardware should be quoted as part of the main tender. Moreover, complete networking should be established by including in the OIS and to be demonstrated to the customer for final acceptance.**
- **CT Simulator**
  LINAC – make: Electa Model: Precise With Varian TPS
  CT Scan : SIEMENS - Emotion, SIEMENS – AS Definition 128 slice,
  MRI Scan : SIEMENS – Magnatom - Harmony
  PET CT : SIEMENS – Biograph

6.2 **IMPORTANT**: The treatment console should be fully integrated (like 4D integrated treatment console) to provide streamlined front-end integration with MLC workstation, Portal Imaging workstation and other imaging and TPS workstations.

7. SPECIFICATIONS FOR A 3D TREATMENT PLANNING SYSTEM

WORK STATION / SERVER

Hardware:

- ALL the monitors should19" or higher TFT screen – Flat panel display

High end Graphics workstation, consisting of

- Xeon 2.40 GHz or higher
- 6 GB RAM
- Minimum 250 GB hard disk
- DVD-RW drive, internal
- 2 x USB ports, 1 x serial
- 2/3 button wheel mouse and WIN keyboard

Software components:

- Latest Windows

Monitor:

- 19" TFT screen – Flat panel display

Hardware to be provided with a separate high end Graphics card for speedy performance of dose calculation.
The system should have a fast multi-colour plotter to print out various datas and Isodose curves.

3D TELETHERAPY SOFTWARE FEATURES

Contouring:

Volume definition should be possible using Volume Segmentation using threshold, Free hand contour tracing, Contour editing, 3D anistrophic Margins etc**.**

Volume delineation should be possible with Free hand contour tracking or Advanced volume segmentation using threshold in 2D or 3D or with predefined shapes. Various contour editing tools to modify the contour at any plane should be possible.

It is desirable to have the facility to contour in Axial, Sagittal, Coronal or in any oblique planes.

It should be possible to do manual, semi-automated, fully automated contouring / segmentation in the images.

The software should have facility for automated uniform or non-uniform margins. For example it should be possible to expand the clinical target volume (CTV) three dimensions by same magnitude or by different magnitudes to define the planning target will be considered as not meeting the requirements.

It should be possible to copy one organ to another with margin; add margins on a single slice, a range of slices or all slices.

It should also be possible to interactively edit the contours with user choice of segments to reject or accept.

Interpolate algorithm should be available to provide interactive, shape based interpolation – i.e. after contouring only in selected slices, the algorithm should automatically interpolate the closely fitting contours in other slices.

Interpolated contours may be edited: accepted or rejected.

The DRR/BEV image should display the machine diagram to allow real-time checking of machine and patient geometry.

Auto-outlining with Non-Uniform Margins.

Facility to contour on coronal and sagittal and on any arbitrary planes.

Image Fusion Software

This should include automatic and interactive image registration and fusion of CT with MR/PET/NM images for treatment planning.

This should include real time image reformatting and fully automated image alignment.

3D Fusion display with delineation of target in the fused image should be available.

Beam Placement & Definition

It should support external beam shapers (shielding blocks, etc.) and beam definition methods manual or automatic beam placement tool.

Tools for real time checking of machine geometry.

Beam shaping should be possible in multiple ways like automatic shielding block definition conforming to selected volume, definition as aperture or shielding, manual freehand definition, automatic collimator jaw or multileaf position definition etc.

Beam Module should allows the user to create and edit beam setups for 3D CRT plans.A wizard guides the user in creation of a patient specific plan based on user created template plans, allowing set-up of a plan and adapting the field shape in just a few mouse clicks.

Beam Module should offer intuitive and efficient tools for manipulation of beam geometries and field shapes.

Review of plans and dose distributions for single or multiple plans is supported by BM, including summation of multiple plans.

DRR features

Interactive DRR calculation mode must be available Automatic window width/level selection for DRR.

DRR should be interactively updated when the isocenter position is modified should be possible to highlight or suppress different density regions in the DRR Printing of DRR images should be possible.

DRR presets should be user defined Macro function to save a series of frequently used steps should be available.

Specify DRR image enhancement tools to improve DRR image quality Reconstruction of DRRs should be real- time or sub-second Direct printing of DRR on laser film should be possible.

Real-time displays of DRR as beam parameters are changed.

It should be possible to transfer DRR and BEV images to EPID of Linear Accelerator.

Depth Control in oblique projections must be possible

Cross-hair display on DRR to provide scale information.

SUPPORT OF ASSYMMETRIC COLLIMATORS AND MULTILEAF COLLIMATORS (MLCs):

It should be possible to define this asymmetric collimator feature, where both the X- and Y-pairs of jaws are asymmetric. The software should allow multi-leaf collimator placement up to 60 pairs or more.

Isocenter management.

The software should support separate isocenters for multiple target volumes or general regions.

Marked and final isocenters should be reported and displayed in the Localization package for easy confirmation of a physical simulation session.

Hardcopy of the isocenter coordinates should be possible for record of the simulation session.

No limit on number of isocenters per target.

Data Import / Export

System should be able to export Image, volume and plan data in DICOM 3.0 standard along with all Radiotherapy specific data and private objects, DICOM RT plans and data sets.

System should be able to import DICOM RT data.

Dose Module should consist of two different types of calculation algorithm namely

Collapsed Cone Convolution algorithm for photon beam dose calculation

Pencil Beam algorithm for Photon beam dose calculation

It should be possible to define the absolute dose to a specified point for each beam or MUs or time (isotope base machines).

Possible to define wedge fraction for motorized wedge plans

Should have inhomogeneity and bolus correction

Should include various Dose Volume Histogram tools like

- Cumulative and differential histograms
- Comparison of requested Dose Volume Constraints versus achieved Dose Volume Histogram results
- Volumes may be displayed in absolute or relative terms
- Possible to have dose and volume details in tabular format

Should be possible to Export Plans in RTP Connect format

Should include MonteCarlo dose calculation for Electrons module with possibility to have Calculation of electron beams of 4-30MeV from linear accelerators and support of Support for square, circular, and rectangular applicators

IMRT SOFTWARE MODULES

Offered IMRT software should contain following functions:

The user can define Dose Volume Objectives (DVOs) of the following types:

- Minimum Dose Objective and Dose Volume Objective.
- Maximum Dose Objective and Maximum Dose Volume Objective.
- Uniform Dose Objective.
- Surrounding dose fall off objective

The user can define Dose Volume Objective definition as below:

- DVOs are defined by typing values using the keyboard or graphically using the mouse:
- Each ROI can have any number of DVOs defined.
- Each DVO has an individual importance weight.
- ROI may overlap each other.

Offered IMRT Module should have Optimization techniques such as Step and Shoot IMRT and Beam weight optimization.

Offered IMRT Module should be capable of performing Advanced use of Optimization techniques such as Mixing of the Optimization techniques and Consideration of Pre-treated dose.

Offered IMRT module can have MLC segmentation settings as Minimum number of monitor units per segment, Maximum number of MLC segments per plan, Minimum open area per segment and Minimum number of open leaf pairs per segment.

Offered IMRT Module performs AAA or equivalent or monte carlo calculation algorithms during both optimization and during final dose calculation

Offered IMRT Module has different Optimization settings as Resolution of dose calculation grid and Fluence matrix, Termination criteria for the optimization, Use of accurate dose calculation during the optimization, Number of fractions, User definable default values.

Offered IMRT Module offers the user to be able select one, two or all of the following steps during each calculation:

- Optimization of fluence distributions for each beam.
- Segmentation of the fluence distributions into MLC segments and monitor units.
- Final dose calculation.
- Beam weight optimization: Optimization of monitor units for all beams.
- Final dose calculation.

Offered IMRT Module can do mixing of Optimization techniques and during optimization can present Fluence distributions for all beams, Dose distributions in orthogonal planes, Dose Volume Histograms for selected ROI and updated after every iteration

Offered IMRT Module can present the recalculated dose distributions for all beam and in orthogonal directions too, recalculated Dose Volume Histograms for selected ROI, monitor units per beam and segment, number of segments per plan and beam after segmentation.

Offered IMRT Module can display MLC segment display dose using color wash and/or isodose lines, hot or cold spots for selected ROI, defined dose grid and has point dose tool.

Offered IMRT Module can display one or more Dose Volume Histograms per ROI during/after Optimization, Segmentation and Final dose calculation.

Offered IMRT Module should include Direct Step&Shoot optimization(DSS) module.

VMAT SOFTWARE MODULES:

- Offered VMAT Software modules should be compliant with multimodality, modular and flexible dynamic treatment planning environment.
- Offered VMAT module capability including support for single arc, dual arc and skip arc techniques for compatible Varian and Elekta accelerators.

Offered VMAT module should be faster and of assured accuracy

- Should be capable of delivering Complex plans by the Linac via optimal single, multiple or dual arcs with CW and CCW gantry motion to maximize treatment efficiency.
- Should be capable to generate superior plans while limiting leakage, scatter and integral dose to the OARs

Offered VMAT module Should have Specific features like below:

- Should Independent i.e. Support for both Elekta and Varian Linacs
- Seamless connection with compliant R&V systems
- Should be Capable to perform Single and multiple arc capable Non-coplanar arcs for support of stereotactic radiotherapy
- Should be able to do Precision Dual Arc technique with back and forth gantry motion

Offered VMAT module Should be Easy to use

- Easy specification of Dose Volume Objectives
- Dose distribution and DVH updated on all views during optimization
- Graphical visualization of optimized plan Intuitive

Offered VMAT module can handle simultaneous leaf position ,gantry speed and dose rate variation

Output & DICOM Export:

Offered Software modules should be compatible to perform as below

- Export of ideal or reconstructed Fluence distributions and Fluence maps in DICOM RT format
- DICOM RT Plan export to various R&V and QA systems including (but not limited to):
- VISIR, LANTIS, IMPAC, VARIS, Elekta RT Desktop , RIT, MapCheck

Warranty

Treatment Planning System and all its accessories should have a 60months warranty from the date of satisfactory installation and handover.

Service Facilities:

Factory trained and AERB approved Service engineers / Application specialist should be available in India to look after the installation and maintenance of the systems.

FDA approval:

The 3D Treatment planning system should have FDA 510K approval.

Existing installation:

Offered TPS system must have a good number of installation references (atleast five to ten existing users) in India. A copy of the users list in India must be enclosed.

8. Dosimetry Instruments / Accessories

8.1 IMRT 2D array QA tools (2D array for IMRT) & QA software & Portal Dosimetry with EPIQA software – 01 no.
8.2 Compatible phantom for rapid arc / Vmat – 01 no.

a) Isoalign device – 01 no.
b) Electrometer & 0.6cc thimble chamber and connection cable – 01 no.
c) D_{10}/D_{20} phantom – 01 no.
d) 30 x 30 phantom – 01 no.
e) Real Water slab phantom & 0.6 cc chamber adapter – 01 no.
f) Adapter for PTW RFA, ROOS Chamber, 0.125 cc Chamber – 01 no.
g) Barometer Thermometer – 01 no.

8.3 ***IMRT Phantom :***

8.3.1 For performing QA of IMRT, a latest, state-of-the-art tissue/water equivalent cylindrical solid phantom shall be supplied. It shall be possible to do exposure of multiple films for high accuracy in IMRT verification. It shall have a universal design for film verification of Body, Head and Neck and Stereotactic IMRT treatment plans. It should be possible to easily adjust the phantom on the LINAC couch and on CT scanners couch top. It shall be possible to do absolute dose verification with different ionization chamber types that are being offered against this tender. It shall be possible to insert film sheets with a maximum size of 10 x 10 cm (or more) at several locations within the phantom for doing IMRT and SRS/ SRT dose verification. It must also be possible to position those (films) in a transversal, coronal or sagittal orientation. Appropriate markers shall be engraved on the surface of the phantom in different colors for its easy adjustment under the accelerator and in a CT scanner. Localizer plates for the use of the phantom in a CT scanner shall also be quoted. For absolute dose verification, it shall be possible to insert different types of ionization chambers into the phantom. Several auxiliary inserts with different depths and for different chamber types shall be provided. It is extremely essential that, in combination with the film distance plates, the ionization chambers can be placed at any position inside the phantom. The phantom shall have appropriate design to achieve this extremely important and essential requirement.

8.3.2 Phantom material is water/ plastic water / tissue (RW3) equivalent with density not more than 1.032 – 1.05 g/cm$^{2.}$ The phantom consists of 15 or more slabs, each of thickness of 1 cm. The minimum size of the phantom should be 35 L x 35W x 20 H cm. Additional Holder, adaptors, and small blocks are provided for easy distance adjustments. Required number of appropriate size carriage and leveling plates should be supplied.

9. ACCESSORIES FOR 3-D PLANNING AND TREATMENT DELIVERY

9.3 **General:** The following items are required in developing and implementing of a comprehensive, ultra-modern 3-D conformal radiotherapy, and intensity modulated radiation therapy program in the department of Radiotherapy. For all the items the vendor should provide the product information brochures.

9.1.1 Patient fixation / Immobilization accessories for 3D conformal RT
ALL in one - 3 sets (with stand / storage stand)

9.4 Vacuum based radio-translucent cushions for patient immobilization, which are filled with tiny polystyrene beads or of any similar material with same properties, for the following needs:

9.4.1 For treating head and upper thorax region (supine & prone) - 10 nos.
9.4.2 For treating head and upper thorax region (supine) - 10 nos.
9.4.3 For prone head holder - 6 nos.
9.4.4 Large cushion (bed type) with treatment windows - 6 nos.
9.4.5 Large cushion (bed type) without treatment windows - 6 nos.
9.4.6 Small cushion (bed type) with treatment windows (for rectal/bladder cases) - 6 nos.
9.4.7 Cushion for treating thorax region with arms up position - 6 nos.
9.4.8 Cradle / cushion for immobilization of Paediatric patients
9.4.9 Appropriate storage racks (6 sets), color tags (6 sets), helping handsets (6 sets), S-type hooks (6 sets), shall be provided.
9.4.10 Two motor / pumps shall also be provided to mould the cushion (to suck out the air).

9.5 **Breast Immobilization System (2 nos.):** For treating breast patients, a carbon-fiber based immobilization system using side mountable thermoplastic sheets should be supplied. The system should be complete in all respects with board, brackets, handles, 30 thermoplastic sheets etc. In addition to such a system, a complete set of breast treatment **brassiere** should also be provided. With this it should be possible to treat any size of breast.

9.6 **Shields:**

9.6.1 Tungsten eye shields sets (small, medium and large) for both 6 & 9 MeV electrons.
9.6.2 Testicle shield set made of lead about ½" wall thickness (small and Medium)
9.6.3 One Testicle shield stand.
9.6.4 Testicle separator (made of rugged clear acrylic) – 1 no.

9.7 **Thermoplastic sheets** For immobilization of patients (using the head rest and fixation plates provided), appropriate thermoplastic sheets of following sizes and quantities shall be supplied:

9.7.1 Thermoplastic sheet for face / head region only - 100 numbers
9.7.2 Thermoplastic sheet for head & neck region with shoulder area covered – 100 numbers.
9.7.3 Please quote for appropriate base plate also (six numbers)
9.7.4 Thermoplastic sheets for abdominal / pelvis region – 100 numbers.
9.7.5 Please quote for appropriate base plate (six numbers).
9.7.6 Two suitable water baths with temperature control shall also be provided for preparing the thermoplastic mask for the patients.
9.7.7 The head rests, prone headrest, base plates provided should all be compatible to each other. Please ensure this requirement.
9.7.8 Soft jelly bolus material of size 30 cm x 30 cm with a thickness of 0.5 cm, 1 cm, 1.5 cm, 2 cm and 3 cm shall be supplied – 5 sheets for each thickness.
9.7.9 Shoulder retractor for head and neck patients –5 numbers
9.8 No local item for patient immobilization should be quoted.

10. IGRT

10.1. (a) Image guided radiotherapy (IGRT):

The vendor should provide KV based IGRT verification system that should be FDA approved and should be in clinical use in renowned centres worldwide. The imaging system must be deployable and retractable through an automatically controlled, motorized retractable arm. For image guidance, either the digitally reconstructed radiograph from the planning system or a 2D image (kV or MV imaging) and 3D cone beam CT image set will be kept as the reference image and the appropriate image set acquired on the subsequent treatment days will be compared against this reference standard. The couch top shift in x, y and z-directions required for matching the patient's position to the reference image set should then be computed by the image guidance software provided with the system. The software shall then drive the couch remotely to the desired position. The software shall offer both automatic and manual matching modes. It shall also be possible to do matching based on implanted marker

seeds. It shall be possible to acquire such image guided verifications and adjustments of patient's position daily or on selected days during the course of treatment. All such data shall be automatically stored in the database. The

software shall have advanced features for automatic image registration of the 3D image sets. It shall also have very efficient display tools for this purpose. Additionally, it should be possible to superimpose the DICOM-RT structure sets from TPS on the cone beam CT image data. It should be possible to do adaptive radiotherapy. When a flat panel is provided for MV/MV imaging (2D or 3D), such a panel will be of amorphous silicon technology with a minimum size of 30 cm x 30 cm. Import of CBCT for dose calculation and evaluation should be possible.
All data and image transfer shall be fully DICOM-RT compliant. Full DICOM RT Compliance with all import/export licenses shall be provided. Interface with Treatment Planning System DICOM 3 and DICOM RT interface should be included. Import of CBCT data for treatment planning and visualisation of dose distribution should be possible.

10.2 Respiratory gating system – 2Nos (One for Linac And one for CT Simulator)

11. GENERAL CONDITIONS & REQUIREMENTS

In the above specifications wherever the word 'shall' is mentioned, it is taken in the meaning that the required feature / facility / procedure / specification / standard is mandatory.

11.1. All claims regarding meeting of the specifications shall be duly supported by appropriate, latest technical catalogues / brochures from the manufacturer. Simply stating that the equipment meets the specifications is not sufficient and any such quotations will be summarily rejected. Computer printed documents or laser printouts may not be accepted as technical catalogues / brochures.
11.2 During the warranty period, software upgrades and updates shall be provided free of cost wherever applicable.
11.3 The vendors shall submit a compliance statement pointwise in regard to the specifications asked for in the tender. It will be responsibility of the vendors to go through all the tender requirements carefully and accordingly address each and every point about their compliance. The compliance statement shall preferably be made in an Excel worksheet or any other tabular format for easy evaluation. A softcopy of the submitted (signed) compliance statement must be provided on a CD.

11.4 The LINAC system, Oncology Information Management System, the treatment planning system shall all be FDA approved. Similarly the LINAC system shall be type approved or with a NOC from the regulatory body AERB, Mumbai.

11.5 WARRANTY:

11.5.1 The vendor shall give a minimum of **five years comprehensive, on-site warranty for the entire LINAC system** (inclusive of vacuum and non-vacuum parts and of all locally supplied items), TPS, R&V system, EPID System, all computer systems (including bidder's own brand and third party systems) and for all other items supplied (Like UPS including Batteries, Chiller Etc with the LINAC suite, from the principals. Pro-rata warranty is not acceptable. Similarly Comprehensive Maintenance Contract offered by the local agents is also not acceptable.
11.5.2 For the next 5 years after the expiry of warranty period i.e., from 6th year to 10th year, manufacturers shall quote figures year-wise (in Indian rupees only) for on-site comprehensive maintenance contract that includes both **labor plus spare parts**.
11.5.3 Please note that the price SHALL INCLUDE ALL EXPENSES including the Customs clearance, insurance should cover upto satisfactory installation and handover to the INSTITUTE , freight, customs duty, clearance charges and also all expenses towards the maintenance and repairs of the entire LINAC assembly including spare-parts, electrical and electronic items, computer systems, Air-conditioning, cooling systems (including refilling of distilled / industry standard water), networking, accessories, etc. The institute will not be held responsible for payment under any head during these 10 years.
11.5.4 It is again stressed that if any spares are to be imported during warranty period & subsequent five AMC periods, the cost, insurance, freight, customs duty and clearance charges should be borne by the vendor.
11.5.5 List of consumable items like printer cartridges, etc which are not covered by the warranty clauses must be clearly identified and declared by the vendors in the tender. The cartridges and other consumable items of the printer must be available locally for a minimum period of 5 years.
11.5.6 During the warranty and subsequent five CAMC periods, the vendor shall give an uptime guarantee of 95% based on 24 hrs a day, 365 days a year basis. Penalty at the rate of Rs.25,000 per day will be levied for short falling of 95% uptime guarantee. If the machine lies non-functional for a period of more than one week continuously, the same penalty (at the rate of Rs. 25,000 per day) will be imposed even if 95% uptime clause is met with. Any bid without agreeing to the above-mentioned warranty and penalty clauses will be summarily rejected.

11.5.7 Posting of a resident engineer on site will be highly preferred. A list of certified service engineers available should be provided.

11.5.8 Should enclose the list of similar models installed in INDIA & abroad

11.5.9 The installation of the LINAC shall be done by the experienced engineer(s), who has installed at least 5 installations of similar model**.**

11.5.10 An on-line UPS System with the power rating of 60 kVA or higher (as appropriate) for the entire LINAC and all other accessories for 30 min shall be supplied. In addition to this main UPS, additional UPS systems shall be supplied along with all other computer terminals / workstations / accessories wherever applicable. Provide all the details.

11.5.11 The Chiller system shall be provided along with the machine by the principals (imported item). No local system shall be accepted.

11.5.12 Two closed-circuit color TV systems (as mentioned in clause 4.4) with TV monitors and two cameras in the LINAC treatment room shall be supplied.

11.5.13 A patient calling system with 6 channels shall be supplied.

11.5.14 Internet broadband connectivity for remote servicing shall be provided (as mentioned in clause 6.1).

11.5.15 Required capacity of the Air Conditioning should be provided for all the quoted items.

11.6 Training

11.6.1 In order to fully and optimally utilize the equipment, training on the offered IMRT LINAC for one physicist and one radiation oncologists for a minimum period of two weeks in a reputed institution in a developed country where such advanced installations are available and in clinical use for a long period of time. For 3D-TPS with IMRT & SRT capabilities, another two weeks training at a reputed center in a developed country where such a system is used, for one Physicist and one Radiation Oncologist.

11.6.2 The supplier shall provide complete on-site training to all the RT staff of the department for a minimum period of 15 working days. The institution reserves rights to split the above on-site training days in phases for optimal learning.

11.6.3 Training for four technologists should be provided at a reputed center where IMRT is practiced extensively and qualitatively.

11.6.4 The entire system will be handed over to the user in working condition and after giving at least two weeks onsite training to all RT staff. Putting the entire system into working condition and maintaining it for at least 10 years as mentioned above shall be the responsibility of the vendor. **The LINAC system is deemed to be accepted only after obtaining the AERB's commissioning for clinical use.** Any further requirement either equipment or other, as needed for the aforesaid commissioning, shall be supplied by the supplier of LINAC free of cost.

11.6.5 If any/more item(s) which is/are essential for commissioning the system and maintaining it at least for 10 years and does/do not form part of the above specifications shall be supplied by the vendor.

12. OPTIONAL

12.1 Beam Matching

The 6 MV and 15 MV with all Electron Energies of the quoted model must be set to finely match with the 6 MV and 15 MV and All electron energies beam of the existing LINAC in the department (Unit: Elekta Precise)Moreover, it should be possible to allow import and export of relevant set of machine parameters, between these machines to the quoted R&V system. This is required for the uninterrupted treatments to the cancer patients, if any one of the LINACs is down and under service. The fine beam matching between these machines should be demonstrated dosimetrically to the customer at the time of commissioning of the quoted Linac.

12.2 Portal dosimetry

Portal imaging system should be capable of doing online portal dosimetry. Necessary dose prediction and evaluation methods should be provided to TPS for Portal Dosimetry. A wide range of dose rates and energy should be possible for performing this pretreatment QA for both segmental (step and shoot) as well dynamic IMRT treatment plans. The portal images acquired for a patient should be automatically tagged to the particular patient's file. The image should be available at Review workstation along with patient record. The imaging detectors should be replaced free-of-cost as and when the image quality deteriorates from the quality at the time of acceptance. QA equipment for portal vision including necessary software and hardware (phantom) should be included.

NOTE : Institute reserves the right to take decision on the above options.