



TENDER DOCUMENT

FOR

**TOWARDS SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF VRF/VRV
AIR CONDITIONING SYSTEM ALONG WITH ASSOCIATED EQUIPMENT**

**COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH
NATIONAL AEROSPACE LABORATORIES
PB NO.1779, HAL AIRPORT ROAD, BENGALURU – 560017
KARNATAKA-INDIA**



Council of Scientific and Industrial Research
National Aerospace Laboratories
PB No.1779, HAL Airport Road, Bengaluru – 560 017, Karnataka-India
Tel #: 00 91 80 25086040/6041
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Invitation for Bids / Notice Inviting E-Tender

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research, an autonomous body under Department of Scientific and Industrial Research (Government of India), New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites sealed bids from their Manufacturers, their distributors and Indian Agent of Foreign Principals, if any, for the procurement of the following Goods/Services for its day-to-day research. The Technical specifications, Allied requirements and scope of supply are given in **Chapter 4** appended herewith.

Sr. No.	Tender No.	Brief Description of item(s)	Unit	Quantity	Single / Two Bid
1	NAL/PUR/CNSU/355/17-Z	Supply, Installation, Testing and Commissioning of 32 HP VRF/VRV Air Conditioning System along with associated equipment.	Set	1	Two
2	NAL/PUR/ELK/323/17-Z	Supply, Installation, Testing and Commissioning of 22 HP VRF System including outdoor/Indoor units.	Set	1	
		Supply, Installation, Testing and Commissioning of 18 HP VRF System including outdoor/Indoor units.	Set	1	

1. E-Bids are invited through the electronic tendering process and the Tender Document can be downloaded from the e-Tender Central Public Procurement Portal (CPPP) of Government of India, <https://etenders.gov.in>. A copy of the Tender Document is also available on CSIR-NAL Website, www.nal.res.in. **The submission of e-Bids will be only through the e-Tender portal <https://etenders.gov.in>. Bids will not be accepted in any other form.**
2. The address for submission of EMD/Bid Security and for obtaining further information:
Stores & Purchase Officer
Purchase Section
CSIR- National Aerospace Laboratories
PB No.1779, HAL Airport Road, Kodihalli, Bengaluru – 560017
Karnataka-India
Tel # : 080 25086040/6041/6044
Fax # : 080 2526911
Email : purchasek@nal.res.in, mkala@nal.res.in
3. The prospective bidders should adhere to deadlines specified in Tender Details Screen corresponding to this Tender on E-Tender portal <https://etenders.gov.in>.

4. A Pre-Bid Conference will be held on schedule mentioned below. All prospective bidders are requested to kindly submit their queries to the address indicated above so as to reach the Stores & Purchase Officer at least one day before Pre-Bid Conference.

	Date	Time in hours (IST)	Venue
Pre-Bid Conference	NOT APPLICABLE		

5. The Bid prepared by the Bidder shall include the following: -

Bid Security (BS) / Earnest Money Deposit (EMD)	
a)	In case of Foreign Bidder
	<p>US\$ 2500/- [US\$ Two Thousand Five Hundred Only]</p> <p>Euro 2100/- [Euro One Thousand Two Only]</p>
	In case of Indigenous Bidder
	<p>Rs. 160000/- [Rupees One Lakh Sixty Thousand Only]</p>
b)	<p>The Bid Security/Earnest Money Deposit shall be deposited through Bank Guarantee/Demand Draft drawn in favour of "The Director, National Aerospace Laboratories, Bengaluru". The original Bid Security/EMD must be delivered to address mentioned in Sr.No.2 above on or before bid submission date and time as mentioned in "Date Sheet" failing which the bid shall be summarily rejected.</p> <p>For further details, refer Clause No.1.15 of Tender document.</p>
c)	Form as specified in Chapter No.8

6. The Schedule for Submission of Bids and Opening of Bids is as follows: -

Date & Time of Submission of Bid		Date and Time of Opening of Bid (Part-I – Technical Bid Only)	
Date	Time (IST)	Date	Time (IST)
05-Mar-2018	10:00 Hrs	06-Mar-2018	11:00 Hrs

7. The Director, CSIR-National Aerospace Laboratories (NAL), Bengaluru, India reserves the right to accept or reject any or all tenders / offers either in part or in full or to annul the tender process at any stage or to split the order without assigning any reasons there for.

SCHEDULE CUM CRITICAL DATE SHEET

1	Name of Organization	CSIR-National Aerospace Laboratories, Bengaluru
2	Tender Reference No	NAL/PUR/CNSU/355/17-Z NAL/PUR/ELK/323/17-Z
3	Tender Type (Open/Limited/EOI/Auction/Single)	Limited
4	Type/Form of Contract (Work/Supply/Auction/Service/Buy/Empanelment/Sell)	Supply
5	No of Covers (One/Two/Three/Four)	Two
6	Tender Category (Services/Goods/Works)	Goods
7	Allow Resubmission (Only in online mode within scheduled period)	Yes
8	Allow Withdrawal (Only in online mode within scheduled period)	Yes
9	Allow Offline Submission	No
10	Type/Form of Contract (Work/Supply/Auction/Service/ Buy/Empanelment/Sell)	Supply
11	Supply Title	Package-1: Supply, Installation, Testing and Commissioning of 32 VRF/VRV Air Conditioning System along with associated equipment. Package - 2: Supply, Installation, Testing and Commissioning of 22 HP VRF System including outdoor/Indoor units. Package - 3: Supply, Installation, Testing and Commissioning of 18 HP VRF System including outdoor/Indoor units.
12	Supply Description	Package - 1: Supply, Installation, Testing and Commissioning of VRF/VRV Air Conditioning System along with associated equipment. Package - 2: Supply, Installation, Testing and Commissioning of 22 HP VRF System including outdoor/Indoor units. Package - 3: Supply, Installation, Testing and Commissioning of 18HP VRF System including outdoor/Indoor units. Details as per Chapter-4
13	Product Category (Civil Works/Electrical Works/Fleet Management/Computer Systems)	R & D Equipment (Electrical Works)
14	Is Multi Currency Allowed	Yes
15	a) Tender Publishing Date & Time	02-Feb-2018 (20:00 Hrs)
	b) Document Download Start Date & Time	05-Feb-2018 (09:00 Hrs)
	c) Seek Clarification Start Date & Time	05-Feb-2018 (09:00 Hrs)
	d) Seek Clarification End Date & Time	02-Mar-2018 (16:30 Hrs)
	e) Pre-Bid Conference Date & Time	NOT APPLICABLE
	f) Bid Submission Start Date & Time	05-Feb-2018 (09:00 Hrs)
	g) Bid Submission End Date & Time	05-Mar-2018 (10:00 Hrs)
	h) Bid Opening Date & Time	06-Mar-2018 (11:00 Hrs)

16	Bid Validity Days	90 days from the date of Opening of the Technical Bid prescribed by the Purchaser
17	Address for communication	CSIR- National Aerospace Laboratories PB No.1779, HAL Airport Road, Kodihalli, Bengaluru - 560017 Karnataka-India
18	Inviting Officer	The Director, CSIR-NAL
19	Contact No	25086040, 25086041, 6044
20	E-mail Address	purchasek@nal.res.in spo@nal.res.in
21	Details specification of the Goods/Services	Refer Chapter-4

General Instructions to Bidders:-

01. Tender Documents May be downloaded from Central Public Procurement Portal <https://www.etenders.gov.in>. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website <https://www.etenders.gov.in>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.
02. Tenderers can access tender documents on the website (For searching in the NIC site <https://www.etenders.gov.in>, kindly go to Tender Search option, select tender type and select ' Council of Scientific and Industrial Research' in organization tab and select 'NAL-Bengaluru-CSIR' in department type. Thereafter, Click on "Search" button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://www.etenders.gov.in> as per the schedule given in the next page.

Stores and Purchase Officer

CONTENTS OF TENDER / BIDDING DOCUMENT

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LIST OF SHORT FORMS AND FULL FORMS

ACRONYM	EXPANSION
BG	BANK GUARANTEE
BS	BID SECURITY
CIF	COST INSURANCE FREIGHT
CIP	CARRIAGE PAID TO
CSIR	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH
CVC	CHIEF VIGILANCE COMMISSION
DGS&D	DIRECTOR GENERAL OF SUPPLIES & DISPOSAL
EMD	EARNEST MONEY DEPOSIT
ESIC	EMPLOYEES STATE INSURANCE CORPORATION
FCA	FREE CARRIAGE ALONG SIDE
FOB	FREE ON BOARD
GCC	GENERAL CONDITIONS OF CONTRACT
GOI	GOVERNMENT OF INDIA
GST	GOODS & SERVICES TAX
IT	INCOME TAX
ICC	INTERNATIONAL CHAMBERS OF COMMERCE
IEMs	INDEPENDENT EXTERNAL MONITORS
IP	INTEGRITY PACT
IPC	INDIAN PENAL CODE
IST	INDIAN STANDARD TIME
ITB	INSTRUCTION TO BIDDER
JS (A)	JOINT SECRETARY (ADMINISTRATION)
LC	LETTER OF CREDIT
LC	LETTER OF CREDIT
LD	LIQUIDATED DAMAGES
NAL	NATIONAL AEROSPACE LABORATORIES
NIT	NOTICE INVITING TENDER
NSIC	NATIONAL SMALL INDUSTRIES CORPORATION
PS	PERFORMANCE SECURITY
SCC	SPECIAL CONDITIONS OF CONTRACT
UNCITRAL	UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE

CHAPTER 1 - INSTRUCTIONS TO BIDDERS - Table of Contents

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A. Introduction

Instructions to bidder are broad guidelines to be followed while formulating the bid and its submission to the Purchaser. It also describes the methodology for opening and evaluation of bids and consequent award of contract.

1.1 Eligible Bidders

- 1.1.1. This Invitation for Bids is open to all suppliers.
- 1.1.2. Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids.
- 1.1.3. Bidders who fulfil the Eligibility Criteria mentioned in **Chapter 5** will be considered for Technical Evaluation of bids.

1.2 Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

1.3 Fraud and corruption

- 1.3.1. The purchaser requires that the bidders, suppliers and contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy, the following are defined:

Sr. No.	Term	Meaning
(a)	Corrupt practice	The offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution.
(b)	Fraudulent practice	a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract.
(c)	Collusive practice	means a scheme or arrangement between two or more bidders, with or without the knowledge of the purchaser, designed to establish bid prices at artificial, non-competitive levels.
(d)	Coercive practice	means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.

- 1.3.2. The Purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question.

B. The Bidding Documents

1.4 Cost of Bidding Documents

The bidding documents are to be **downloaded Free of Cost** from CPPP Website <https://etenders.gov.in>

1.5 Content of Bidding Documents

- 1.5.1. The Goods / Services required, bidding procedures and contract terms are prescribed in the bidding documents which should be read in conjunction. The bidding documents, apart from the Invitation for Bids / Notice Inviting Tender have been divided into Eight Chapters.
- 1.5.2. The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

1.6 Clarification of bidding documents

1.6.1. In case when there is NO PRE-BID CONFERENCE

A prospective Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing at the Purchaser's address specified in the Special Conditions of Contract (SCC), latest by the Purchaser will respond in writing through e-mail to any request for clarification, provided that such request is received not later **than ten (10) days** prior to the due date for submission of bids. Should the Purchaser deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under *Clause 1.7* relating to amendment of bidding documents and *Clause 1.19* relating to Due date for Submission of Bids. The amendments issued would be hosted on the CPPP website <https://etenders.gov.in> of the purchaser for the benefit of the prospective bidders who are expected to take cognizance of the same before formulating and submitting their bids.

1.6.2. In case when there is PRE-BID CONFERENCE

- a) A prospective Bidder requiring any clarification of the Biding Documents shall contact the Purchaser in writing at the Purchaser's address specified in the Special Conditions of Contract (SCC), latest by the date specified in the Invitation for Bids / NIT which would be deliberated as **per Clause 1.6.2 (b)** of Instructions to the Bidders. No request for clarification or query shall be normally entertained after the **Pre-Bid Conference**. Should the Purchaser deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under *Clause 1.7* relating to amendment of Bidding Documents and *Clause 1.19* relating to Due Date for Submission of Bids. The clarifications and amendments issued would also be hosted on the CPPP website <https://etenders.gov.in> of the Purchaser for the benefit of the other prospective bidders.
- b) A Pre-bid Conference shall be held as indicated in Invitation to Bid. All prospective bidders are requested to kindly attend the Pre-bid Conference. In order to facilitate CSIR-NAL for proper conduct of the Pre-bid Conference, all prospective bidders are requested to kindly submit their queries (with envelope bearing Tender No. and Date on top and marked "Queries for Pre-bid Conference") so as to reach CSIR-NAL as indicated in Invitation to Bid. Queries may be sent by email to purchasek@nal.res.in/spo@nal.res.in. CSIR-NAL shall answer the queries during the pre-bid conference, which would become a part of the proceedings of the Pre-bid Conference. These proceedings will become a part of clarifications / amendments to the bidding documents and would become binding on all the prospective bidders. These proceedings would also be hosted on CPPP website <https://etenders.gov.in> for the benefit of all the prospective bidders. Before formulating and submitting their bids, all prospective bidders are advised to surf through the CPPP website <https://etenders.gov.in> after the Pre-bid Conference, in order to enable them take cognizance of the changes made in the bidding document.

1.7 Amendment to Bidding Documents

- 1.7.1. At any time prior to the due date for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.
- 1.7.2. All prospective bidders who have down loaded the Tender Document should surf CPPP website <https://etenders.gov.in> from time to time to know about the changes / modifications in the Tender Document. The changes / modifications would also be hosted on the CPPP website <https://etenders.gov.in>. All prospective bidders are expected to surf the CPPP website <https://etenders.gov.in> before formulating and submitting their bids to take cognizance of the amendments.
- 1.7.3. In order to allow prospective bidders reasonable time to take the amendment into account while formulating their bids, the Purchaser, at its discretion, may extend the due date for the submission of bids and host the changes on the CPPP website <https://etenders.gov.in> of the purchaser.

C. Preparation of bids

1.8 Language of Bid

- 1.8.1. The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language only especially when the details are technical. However, if GOI makes it mandatory under Rajbhasha Abhiyan, in that case views of Rajbhasha unit of CSIR may be sought.
- 1.8.2. The Supplier shall bear all costs of translation, if any, to the English language and bear all risks of the accuracy of such translation, for documents provided by the Supplier.

1.9 Documents Comprising the E-Bid

- 1.9.1 The E-bid shall comprise of the following documents as per the requirement of the Tender Document. The documents should be scanned and **uploaded in PDF format**.

Sr. No.	Document Required	Reference Clause & Forms of tender document
1	Bid Security / EMD for amount specified in NIT	1.15 & Chapter-8: Annexure-C
2	Bidder Information Form	Chapter-8: Annexure-A
3	Certificate of Incorporation	5.1 (a)
4	Manufacturers Authorisation Form	Chapter-8: Annexure-B
5	Agency Agreement / MOU	5.1 (b)
6	Eligibility Certificate	5.1 (c)&Chapter-8: Annexure-K
7	Self-Certificate: Non-Black Listing	5.1 (d) &Chapter-8: Annexure-L
8	Performance Statement Form	5.2 (b) &Chapter-8: Annexure-D
9	Service Support Details	5.2 (c) &Chapter-8: Annexure-F
10	Creditworthy Report (if applicable)	5.3
11	Detailed Technical Specifications & Scope of Supply	Chapter-4
12	Schedule of Requirement	Chapter-3
13	Deviation Statement	Chapter-8: Annexure-E (Part-I & II)
14	Bid Form	Chapter-8: Annexure-G
15	Price Schedule Form (s)	Chapter-6

The documents comprising bid should be submitted in the **above sequence in orderly manner**.
Bid is Single Bid or Two Bid is specified in NIT.

1.9.2 **Documents comprising Single Bid**

All the above documents should be submitted in Single E-Bid.

1.9.3 **Documents comprising Two Bid (Technical Bid & Price Bid)**

Technical bid should comprise of documents listed from Sr.No.1 to 13 and Bid Form & Price Schedule Form **without mentioning** prices and discount.

Price Bid should comprise of Bid Form & Price Schedule Form by **mentioning** prices and discount.

1.10 Bid form and Price Schedule

The bidder shall complete the Bid Form and the appropriate Price Schedule form as given in Chapter-6 furnished in the bidding documents. These forms must be completed without any alterations to its format and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested. The Bid Form and the appropriate Price Schedule form shall be submitted in accordance with **ITB Clauses 1.9.2 & 1.9.3** of the bidding documents.

1.11 Bid Prices

1.11.1. The Bidder shall indicate on the appropriate price schedule form, the unit prices and total bid prices of the Goods / Services it proposes to supply under the contract.

1.11.2. Prices indicated on the price-schedule form shall be entered separately in the following manner:

(a) **For Goods manufactured within India:**

i)	The price of the goods quoted Ex-works
ii)	GST which will be payable on the goods if the contract is awarded.
iii)	The charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the price schedule form.
iv)	The installation, commissioning and training charges including any incidental services, if any.

(b) **For Goods manufactured abroad:**

i)	The price of the goods, quoted on FCA (named Airport abroad) or FOB (named port of shipment), as specified in the price schedule form.
ii)	The charges for insurance and transportation of the goods to the port / place of destination.
iii)	The agency commission charges payable to Indian agent in Indian rupees, if any.
iv)	The installation, commissioning and training charges including any incidental services, if any

1.11.3. The terms FOB, FCA, CIF, CIP etc. shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce, Paris.

1.11.4. **Where there is no mention of packing, forwarding, freight, insurance charges, taxes, any charges mentioned as extras as applicable etc.; or tax at your account or tax to be borne by the Buyer, such offer may be rejected as incomplete.**

1.11.5. The price quoted shall remain fixed during the contract period and shall not vary on any account.

1.11.6. All lots and items must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Lots or items not listed in the Price Schedule shall be assumed to be not included in the bid.

1.11.7. The CSIR-NAL is a public funded Research Institution under Department of Scientific & Industrial Research and concessional Custom Duty @5.15% is applicable for the goods purchased for research purpose vide Government of India Notification No.51/96-Customs dated 23.07.1996

1.11.8. In case of imports the freight & insurance will be paid by the Purchaser, as the consignments are to be shipped through the Purchaser nominated freight forwarder.

1.11.9. The quotation should be only in Indian Rupees for indigenous items. In case of foreign quote, the vendors may quote their rates in Indian Rupees as well as in Foreign Currency.

1.11.10. **In case of INR bids the price criteria should be on Free Delivery to CSIR-NAL, Bengaluru. Govt. Levies like GST etc., if any, shall be paid at actual rates applicable on the date of delivery. Rates should be quoted accordingly giving the basic price, GST etc., if any.**

1.11.11. Custom Duty is levied on all import meant for CSIR-NAL. Hence, the suppliers are requested to quote only on FOB/FCA basis, freight, insurance and custom duty as applicable to R&D Institutions will be paid by the Purchaser.

- 1.11.12. CSIR-CSIR-NAL is a public funded Research Institution under Department of Scientific & Industrial Research and concessional GST (IGST@5% OR SGST @ 2.5% and [CGST@2.5%](#)) shall be made applicable for the goods purchased for research purpose vide Ministry of Finance (Department of Revenue) Notification No.47/2017-Integrated Tax dated 14.11.2017 & Notification No.45/2017-Central Tax dated 14.11.2017 in due course of time. Till such time GST as applicable shall be paid.

Note: All payments due under the contract shall be paid after deduction of statutory levies at source (like ESIC, IT, etc.), wherever applicable.

1.12 Bid Currencies

Prices shall be quoted in Indian Rupees for offers received for supply within India and in freely Convertible foreign currency in case of offers received for supply from foreign countries.

1.13 Documents Establishing Bidder's Eligibility and qualifications

- 1.13.1. The bidder shall furnish, as part of its bid, documents establishing the bidders' eligibility to bid and its qualification to perform the contract if its bid is accepted.

- 1.13.2. The documentary evidence of the bidders qualification to perform the contract if the bid is accepted shall establish to the purchasers satisfaction that:

(a)	The bidder meets the qualification criteria listed in bidding documents, if any.
(b)	Bidder who doesn't manufacture the goods it offers to supply shall submit Manufacturers' Authorization Form using the form specified in the bidding document to demonstrate that it has been duly authorized by the manufacturer of the goods to quote and / or supply the goods.
(c)	In case a bidder not doing business within India, it shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India, equipped and able to carry out the supply, maintenance, repair obligations etc. during the warranty and post warranty period or ensure a mechanism at place for carrying out the supply, maintenance, repair obligations etc. during the warranty and post-warranty period.

- 1.13.3. Conditional tenders / offers shall **not** be accepted.

1.14 Documents Establishing Goods' Eligibility and Conformity to Bidding Documents

- 1.14.1. To establish the goods' eligibility, the documentary evidence of the goods and services eligibility shall consist of a statement on the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at the time of shipment.

- 1.14.2. To establish the conformity of the goods and services to the specifications and schedule of requirements of the bidding document, the documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings and data, and shall consist of:

(a)	A detailed description of the essential technical and performance characteristics of the goods;
(b)	A list giving full particulars, including available sources and current prices, of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods during the warranty period following commencement of the use of the goods by the Purchaser in the Price- bid ; and
(c)	An item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.

- 1.14.3. For purposes of the commentary to be furnished pursuant to above, the Bidder shall note that standards for workmanship, material and equipment, designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute these in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

1.15 Bid Security (BS) / Earnest Money Deposit (EMD)

1.15.1. The Bidder shall furnish, as part of its bid, a Bid security (BS) / Earnest Money Deposit (EMD) of amount as specified in NIT in the form of a Bank Guarantee / Demand Draft drawn on any Nationalized Bank in favour of the Director, National Aerospace Laboratories Bengalur.

A. In case of Foreign Bidder(s):

a)	The BS shall be submitted either by the principal or by the Indian agent
b)	The bidder who submits the tender on behalf of their principals should produce documentary evidence in support of their authority to quote
c)	The Bank Guarantee is insisted due to steep fluctuations in foreign exchange hence the foreign DDs are not accepted towards BS/EMD

B. In the case of indigenous bidders:

a)	The BS shall be submitted by the manufacturer or their specifically authorized dealer/bidder
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1.15.2. E-Bids submitted without BS/EMD will stand rejected. BS/EMD will not be accepted in the form of cash / cheque or any other form other than DD/Bank Guarantee as per format given in Chapter-8: **Annexure A**. No interest is payable on BS/EMD

1.15.3. The bid security is required to protect the Purchaser against the risk of Bidder's conduct, which would warrant the Bid security's forfeiture.

1.15.4. The bid security shall be in Indian Rupees for offers received for supply within India and denominated in the currency of the bid or in any freely convertible foreign exchange in the case of offers received for supplies from foreign countries in equivalent Indian Rupees. The bid security shall be in one of the following forms at the bidders' option:

(a)	A Bank Guarantee (BG) issued by a Nationalized Bank / Foreign Bank operating in India in the form provided in the bidding documents and valid for 45 days beyond the validity of the bid. In case a bidder desires to submit a BG issued from a foreign bank, then the same should be confirmed by a Nationalised / Scheduled Indian bank; OR
(b)	A Banker's cheque or demand draft in favour of the Purchaser issued by any Nationalised Bank.

1.15.5. The bid security shall be payable promptly upon written demand by the purchaser in case the conditions listed in the **ITB clause 1.15.11** are invoked.

1.15.6. The bid security should be submitted in its original form to the address:
STORES & PURCHASE OFFICER,
CSIR-NATIONAL AEROSPACE LABORATORY
PB NO.1779, HAL AIRPORT ROAD, KODIHALLI,
BENGALURU - 560017
KARNATAKA-INDIA

Scanned Copy of Demand Draft/Bank Guarantee towards bid security should be uploaded along with the E-bid.

1.15.7. Bid security / EMD is the mandatory requirement and exemption is applicable to the firms registered with NSIC only for the manufacture of the tendered goods and not for selling products manufactured by other companies.

1.15.8. The Bid Security of unsuccessful bidder will be discharged / returned as promptly as possible but positively within a period of 30 days after the expiration of the period of bid validity or placement of order whichever is later, without any interest.

1.15.9. The successful Bidder's bid security will be discharged upon the Bidder furnishing the Performance Security, without any interest. Alternatively, the BS could also be adjusted against Performance Security, if it is paid through Demand Draft / Banker's Cheque.

- 1.15.10. The receipt of Bid security before time and date of submission of bid is mandatory requirement. The bid is liable to be rejected if the bid security is not received within stipulated time.
- 1.15.11. The bid security may be forfeited:

(a)	If Bidder withdraws or amends or modifies or impairs or derogates its bid during the period of bid validity specified by the Bidder on the Bid Form; OR
(b)	In case of successful Bidder, if the Bidder fails to furnish order acceptance within 15 days of the order or fails to sign the contract and / or fails to furnish Performance Security within 21 days from the date of contract / order.

- 1.15.12. Whenever the bidder chooses to submit the Bid Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

1.16 Period of Validity of Bids

- 1.16.1. Bids shall remain valid for minimum of 90 days after the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.
- 1.16.2. In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by fax or e-mail). The bid security provided shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.
- 1.16.3. Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

1.17 Format and Signing of Bid

- 1.17.1. The bids may be submitted as Single-bid or Two-bid as specified in the Invitation for Bids / NIT.
- 1.17.2. In case the bids are invited on single bid basis, then the Bidder shall submit E-bid comprising all documents listed under clause 1.9 relating to documents comprising the bid.
- 1.17.3. In case the bids are invited on two-bid system, the Bidder shall submit E-bid in two separate parts. First part shall contain Technical bid comprising all documents listed under clause relating to Documents Comprising the Bid excepting bid form and price schedule forms. The second part shall contain the Price-Bid comprising Bid Form and Price Schedule forms.
- 1.17.4. The scanned copies of the E-bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. All pages of the bid, except for un-amended printed literature, shall be initialled by the person or persons signing the bid.
- 1.17.5. Any interlineations, erasures or overwriting shall be valid only if they are initialled by the person or persons signing the bid.

D. Submission of E-Bids

1.18 Submission of E-Bids

- 1.18.1. Bids shall be submitted online only at CPPP website <https://etenders.gov.in> Manual/ Offline bids shall not be accepted under any circumstances.
- 1.18.2. The Bidder shall download the Tender Enquiry Document directly from the website <https://etenders.gov.in> and shall not tamper/modify it in any manner. In case if the same is found to be tampered/modified in any manner, Tender/Bid will be summarily rejected and EMD would be forfeited.
- 1.18.3. The complete bidding process is online. Bidders should be in possession of valid Digital Signature Certificate (DSC) of class III for online submission of bids. Prior to bidding DSC need to be registered on

the website mentioned above. If the envelope is not digitally signed & encrypted the Purchaser shall not accept such open Bids for evaluation purpose and shall be treated as non-responsive and rejected.

- 1.18.4 Bidders are advised to go through “**Bidder Manual Kit**”, “**System Settings**” & “**FAQ**” links available on the login page of the e-Tender portal for guidelines, procedures & system requirements. In case of any technical difficulty, Bidders may contact the help desk numbers & email ids mentioned at the e-tender portal. Every Bidder will be required to obtain a Class-III Digital Signature (DSC) for submission of Bids.
- 1.18.5 Bidders are advised to visit CPPP website <https://etenders.gov.in> regularly to keep themselves updated, for any changes/modifications in the Tender Enquiry Document.
- 1.18.6 Intending bidders are advised to visit CPPP website <https://etenders.gov.in> regularly till closing date of submission of bid, for any corrigendum.
- 1.18.7 The Bid Security/Earnest Money Deposit shall be deposited through Bank Guarantee / Demand Draft drawn in favour of “The Director, National Chemical Laboratory, Pune”. The original Bid Security/EMD must be delivered at address mentioned in Sr.No.2 of NIT till bid submission date and time as mentioned in “Date Sheet” failing which the bid shall be summarily rejected.
- 1.18.8 Purchaser shall receive the bids online through CPPP portal only. The e-Tender portal shall automatically stop accepting bids after the scheduled date and time specified in the Tender Document. Partially submitted bids shall be treated as invalid and shall not be processed.

1.19 Due date for Submission of E-Bids

- 1.19.1. EMD/BS must be received by the Purchaser at the address specified in NIT not later than the time and date specified in NIT.
- 1.19.2. Bidders are advised to upload and submit their E-bids timely within due date for submission of E-Bids in view of the electronic process so as to avoid last minute issues.
- 1.19.3 The Purchaser may, at its discretion, extend the due date for submission of E-bids by amending the tender documents in accordance with Clause relating to Amendment of Bidding Documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the due date will thereafter be subject to the due date as extended.

1.20 Late Submission of EMD

- 1.20.1. Any bid security/EMD received by the Purchaser after the due date for submission of bids prescribed by the Purchaser is liable to be rejected.
- 1.20.2. Bidders must note that the e-tender portal shall not permit uploading of bids after the scheduled time of submission.

1.21 Withdrawal, substitution and Modification of Bids

- 1.21.1 The bidder may withdraw, correct or modify his digitally signed bid after submission prior to the deadline for submission of bids, through provisions of e-tendering portal.
- 1.21.2 The bidder is not allowed to modify or withdraw bid after deadline for submission of bids.

E. Opening and Evaluation of E-Bids

1.22 Opening of E-Bids by the Purchaser

- 1.22.1 The E-bids shall be opened online by authorised officials of the Purchaser as per schedule given in Date Sheet.
- 1.22.2 In case, the day of bid opening is declared a holiday by the government, the E-bids will be opened on the next working day at the same time. No separate intimation shall be sent to the bidders in this regard.

1.22.3 Since, E-bid is an online process; the E-bid opening or any other process may be delayed due to any technical/server issue. If any such issue arises, this will not be tantamount to process delay and CSIR-NAL will not be responsible for the same.

1.22.4 On opening of bids online, accepting the bid will not mean that the firm is technically or financially qualified.

1.23 Confidentiality

1.23.1 Information relating to the examination, evaluation, comparison, and post qualification of bids, and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with such process until Award of the Contract.

1.23.2 Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post qualification of the bids or contract award decisions may result in the rejection of its Bid.

1.24 Clarification of Bids

To assist in the examination, evaluation, comparison and post qualification of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. However, no negotiation shall be held except with the lowest bidder, at the discretion of the purchaser. Any clarification submitted by a bidder in respect to its bid which is not in response to a request by the purchaser shall not be considered.

1.25 Preliminary Examination

1.25.1 The Purchaser shall examine the bids to confirm that all documents and technical documentation requested in **ITB Clause 1.9** have been provided, and to determine the completeness of each document submitted.

1.25.2 The Purchaser shall confirm that the following documents and information have been provided in the Bid. If any of these documents or information is missing, the offer shall be rejected.

(a) All the tenders received will first be scrutinized to see whether the tenders meet the basic requirements as incorporated in the tender enquiry document. The tenders, who do not meet the basic requirements, will be treated as non-responsive and ignored. The following are some of the important points, for which a tender may be declared as non-responsive and will be ignored, during the initial scrutiny:

i	The Bid is unsigned
ii	The Bidder is not eligible
iii	The Bid validity is shorter than the required period
iv	The Bidder has quoted for goods manufactured by a different firm without the required authority letter from the proposed manufacturer
	Bidder has not agreed to give the required performance security
vi	The goods quoted are sub-standard, not meeting the required specification, etc.
vii	Against the Requirement (Scope of supply) the bidder has not quoted for the entire requirement as specified in Chapter 4
viii	The bidder has not agreed to some essential condition(s) incorporated in the tender.

(b) Bid Form and Price Schedule Form, in accordance with **ITB Clause 1.10**. In case of two-bid system these forms shall be examined after opening of the Price Bids of the technically qualified bidders.

1.26 Responsiveness of Bids

1.26.1 Prior to the detailed evaluation, the purchaser will determine the substantial responsiveness of each bid to the bidding documents. For purposes of this clause, a substantive responsive bid is one, which conforms to all terms and condition of the bidding documents without material deviations, reservations or omissions. A material deviation, reservation or omission is one that:

(a)	affects in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Tender; OR
-----	--

(b)	limits in any substantial way, inconsistent with the Bidding Documents, the Purchaser's rights or the Bidder's obligations under the Proposed Contract; OR
(c)	if rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

1.26.2. The Purchasers' determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

1.26.3. If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation or omission.

1.27 Non-Conformity, Error and Omission

1.27.1. Provided that a Bid is substantially responsive, the Purchaser may waive any non-conformities or omissions in the Bid that do not constitute a material deviation.

1.27.2. Provided that a bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non-conformities or omissions in the bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

1.27.3. Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:

(a)	if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
(b)	if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
(c)	if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

1.27.4. Provided that a bid is substantially responsive, the purchaser may request that a bidder may confirm the correctness of arithmetic errors as done by the purchaser within a target date. In case, no reply is received then the bid submitted shall be ignored and its Bid Security may be forfeited.

1.28 Examination of Terms & Conditions, Technical Evaluation

1.28.1. The Purchaser shall examine the Bid to confirm that all terms and conditions specified in the GCC and the SCC have been accepted by the Bidder without any material deviation or reservation.

1.28.2. The Purchaser shall evaluate the technical aspects of the Bid submitted in accordance with **ITB Clause 1.14**, to confirm that all requirements specified in Chapter 4 of the Bidding Documents have been met without any material deviation or reservation.

1.28.3. If, after the examination of the terms and conditions and the technical evaluation, the Purchaser determines that the Bid is not substantially responsive in accordance with **ITB Clause 1.26**, it shall reject the Bid.

1.29 Conversion to Single Currency

To facilitate evaluation and comparison, the Purchaser will convert all bid prices expressed in the amounts in various currencies in which the bid prices are payable to Indian Rupees at the selling exchange rate established by any bank in India as notified in the Newspapers on the date of bid opening in the case of single bid and the rates prevalent on the date of opening of the Price Bids in case of two-bid. For this purpose, exchange rate notified in www.xe.com or www.rbi.org or any other website would be used by the purchaser.

1.30 Evaluation and comparison of bids

- 1.30.1. The Purchaser shall evaluate each bid that has been determined, up to this stage of the evaluation, to be substantially responsive.
- 1.30.2. To evaluate a Bid, the Purchaser shall only use all the factors, methodologies and criteria defined below. No other criteria or methodology will be used.
- 1.30.3. The bids shall be evaluated on the basis of final landing cost which shall be arrived as under:

(a) **For Goods manufactured within India**

i)	The price of the goods quoted Ex-works
ii)	GST which will be payable on the goods if the contract is awarded.
iii)	The charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the price schedule form.
iv)	The installation, commissioning and training charges including any incidental services, if any as given in Scope of Supply (Chapter 4)

(b) **For Goods manufactured abroad**

i)	The price of the goods, quoted on FCA (named Airport abroad) or FOB (named port of shipment), as specified in the price schedule form.
ii)	The charges for insurance and transportation of the goods to the port / place of destination i.e. CIP/CIF Price.
iii)	The agency commission charges payable to Indian agent in Indian rupees, if any.
iv)	The installation, commissioning and training charges including any incidental services, if any

- 1.30.4. The comparison between the indigenous and the foreign offers shall be made on FOR destination basis and CIF / CIP basis respectively. However, the CIF / CIP prices quoted by any foreign bidder shall be loaded further as under:-
- (a) Towards customs duty and other statutory levies – as per applicable rates.
- (b) Towards custom clearance, inland transportation etc.- 2% of the CIF / CIP value.
- 1.30.5. In case of Purchase of many items against one tender, which are not inter- dependent or, where compatibility is not a problem, normally the comparison would be made on ex-works, (in case of indigenous items) and on FOB / FCA (in the case of imports) prices quoted by the firms for identifying the lowest quoting firm for each item.
- 1.30.6. Orders for Imported Goods need not necessarily be on FOB / FCA basis rather it can be on the basis of any of the Incoterms latest edition as may be amended from time to time by the ICC or any other designated authority and favourable to CSIR -NAL.
- 1.30.7. Wherever the price quoted on FOB / FCA and CIF / CIP basis are the same, the Contract would be made on CIF / CIP basis only.
- 1.30.8. The GCC and the SCC shall specify the mode of transport i.e. whether by air / ocean / road / rail.

1.31 Comparison of Bids

The Purchaser shall compare all substantially responsive bids to determine the lowest valued bid, in accordance with **ITB Clause 1.30**.

1.32 Contacting the Purchaser

- 1.32.1. Subject to **ITB Clause 1.24**, no Bidder shall contact the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded.
- 1.32.2. Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.

1.33 Post qualification

- 1.33.1. In the absence of pre-qualification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in **ITB Clause 1.13**.

- 1.33.2. The determination will take into account the Eligibility & Qualification criteria listed in the bidding documents and will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as the Purchaser deems necessary and appropriate.
- 1.33.3. An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's bid.

F. Award of contract

1.34 Negotiations

Normally, there shall not be any negotiation. Negotiations, if at all, shall be an exception and only in the case of items with limited source of supply. Negotiations shall be held with the lowest evaluated responsive bidder. Counter offers tantamount to negotiations, shall be treated at par with negotiations.

1.35 Award Criteria

Subject to **ITB Clause 1.37**, the Purchaser will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined to be the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily. The details of the award would be hosted on the CPPP website <https://etenders.gov.in>.

1.36 Purchaser's right to vary Quantities at Time of Award or later

The Purchaser reserves the right at the time of Contract award to increase or decrease the quantity of goods and services originally specified in the Chapter 4 without any change in unit price or other terms and conditions. Further, at the discretion of the purchaser, the quantities in the contract may be enhanced by 30% within the delivery period.

1.37 Purchaser's right to accept any Bid and to reject any or all Bids

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders.

1.38 Notification of Award

- 1.38.1. Prior to the expiration of the period of bid validity, the Purchaser will notify the successful bidder in writing by registered letter or by cable or telex or fax or e mail that the bid has been accepted and a separate purchase order shall follow through post.
- 1.38.2. Until a formal contract is prepared and executed, the notification of award should constitute a binding contract.
- 1.38.3. Upon the successful Bidder's furnishing of the signed Contract Form and Performance Security pursuant to **ITB Clause 1.41**, the Purchaser will promptly notify each unsuccessful Bidder and discharge its bid security.

1.39 Signing of Contract

- 1.39.1. Promptly after notification, the Purchaser shall send the successful Bidder the Purchase Order.
- 1.39.2. Within twenty-one (21) days of date of the Purchase Order, the successful Bidder shall enter into Contract Agreement as per Chapter 7.

1.40 Order Acceptance

- 1.40.1. The successful bidder should submit Order acceptance within 15 days from the date of issue of Purchase Order, failing which it shall be presumed that the vendor is not interested and his bid security is liable to be forfeited pursuant to **ITB Clause 1.15.11**.
- 1.40.2. The order acceptance must be received within 15 days. However, the Purchaser has the powers to extend the time frame for submission of order acceptance and submission of Performance Security (PS). Even after extension of time, if the order acceptance / PS are not received, the contract shall be cancelled and limited tenders irrespective of the value shall be invited from the responding firms after

forfeiting the bid security of the defaulting firm, where applicable, provided there is no change in specifications. In such cases the defaulting firm shall not be considered again for re-tendering in the particular case.

1.41 Performance Security

Within 21 days of receipt of the notification of award / Purchase Order as per the GCC Clause 2.12, the Supplier shall furnish Performance Security for the amount specified in SCC, valid for the time 60 days after the warranty period.

1.42 Assistance to Bidders:

1.42.1 Any queries relating to the Tender Enquiry Document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the NIT.

1.42.2 Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

CHAPTER 2
CONDITIONS OF CONTRACT

A. GENERAL CONDITIONS OF CONTRACT

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Note: The General Conditions of Contract shall form the part of Purchase Order / Contract.

A. GENERAL CONDITIONS OF CONTRACT

2.1. Definitions

The following words and expressions shall have the meanings hereby assigned to them:

Sr. No.	Words / Expressions	Meaning
(a)	Contract	The Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
(b)	Contract Documents	The documents listed in the Contract Agreement, including any amendments thereto.
(c)	Contract Price	The price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
(d)	Day	Calendar day
(e)	Completion	The fulfilment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
(f)	GCC	The General Conditions of Contract.
(g)	Goods	All of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract
(h)	Services	The services incidental to the supply of the goods, such as transportation, insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.
(i)	SCC	The Special Conditions of Contract.
(j)	Subcontractor	Any natural person, private or government entity, or a combination of the above, to which any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
(k)	Supplier	The natural Person, Private or Government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
(l)	Council	The Council of Scientific & Industrial Research (CSIR), registered under the Societies Registration Act, 1860 of the Government of India having its registered office at 2, Rafi Marg, New Delhi-110001, India.
(m)	Purchaser	Any of the constituent Laboratory/Institute of the Council situated at any designated place in India as specified in SCC
(n)	The final destination	The place named in the SCC.

2.2 Contract Documents

2.2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

2.2.2 Successful bidder shall have to enter into Contract Agreement on Rs.500/- non judicial stamp paper as per Contract Form given in Chapter 7 within 21 days of placement of Purchase Order having value above Rs. 25 Lacs or equivalent amount in Foreign Currency.

2.3 Fraud and Corruption

The purchaser requires that bidders, suppliers, contractors and consultants, if any, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy,

(a) The terms set forth below are defined as follows:

I	Corrupt practice	The offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution
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II	Fraudulent practice	A misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract
III	Collusive practice	A scheme or arrangement between two or more bidders, with or without the knowledge of the Borrower, designed to establish bid prices at artificial, non-competitive levels
IV	Coercive practice	Harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract

- (b) The purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question.

2.4 Joint Venture, Consortium or Association/Amalgamation/Acquisition, Patent Indemnity etc.

If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfilment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

2.4.1. Amalgamation/Acquisition etc.:

In the event the Manufacturer/Supplier proposes for amalgamation, acquisition or sale its business to any firm during the contract period, the Buyer/Successor of the Principal Company are liable for execution of the contract and also fulfilment of contractual obligations i.e. supply, installation, commissioning, warranty, maintenance/replacement of spares accessories etc. You may confirm this condition while submitting the bid.

2.4.2 Indemnity Bond

In order to safeguard the interest of CSIR-NAL, the supplier should submit Indemnity Bond as given in Chapter-8 (Annexure-J) on Rs.500/- non judicial stamp paper within 21 days of placing of the order for Purchase Order having value above Rs. 25 lakh or equivalent amount in Foreign Currency.

2.4.3 Patent Indemnity

- a) The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 2.4.3(a), indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(I)	the installation of the Goods by the Supplier or the use of the Goods in India
AND	
(II)	the sale in any country of the products produced by the Goods

- b) If any proceedings are brought or any claim is made against the Purchaser, the Purchaser shall promptly give the Supplier a notice thereof and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claims.

2.5 Scope of Supply

Scope of Supply (i.e. the Goods to be supplied and Related Services to be performed) shall be as specified in the Chapter-4 clause 4.2

2.6 Suppliers' Responsibilities

The Supplier shall supply all the Goods and perform all Related Services included in the Scope of Supply-Clause 2.5 of the GCC and the Delivery &Completion Schedule, as per GCC Clause 2.15 relating to delivery and document.

2.7 Contract price

Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.

2.8 Copy Right

The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party

2.9 Application

These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

2.10 Standards

The Goods supplied and services rendered under this Contract shall conform to the standards mentioned in the Technical Specifications and Schedule of Requirements, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

2.11 Use of Contract Documents and Information

2.11.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.

2.11.2 The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated above except for purposes of performing the Contract.

2.11.3 Any document, other than the Contract itself, enumerated above shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

2.12 Performance Security (PS)

2.12.1 Within 21 days of receipt of the notification of award of contract / Purchase Order, the Supplier shall furnish performance security in the amount specified in SCC, valid till 60 days after the warranty period. Alternatively, the PS may also be submitted at the time of release of final payment in cases where part payment is made against delivery & part on installation. The PS, where applicable, shall be submitted in advance for orders where full payment is to be made on Letter of Credit (LC) or on delivery. In this case, submission of PS at the time of negotiation of documents through Bank would be stipulated as a condition in the LC and the BS should be kept valid till such time the PS is submitted.

2.12.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

2.12.3 The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries.

2.12.4 In the case of imports, the PS may be submitted either by the principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the manufacturer or their authorized dealer / bidder.

2.12.5 The Performance security shall be in one of the following forms:

(a)	A Bank guarantee or stand-by Letter of Credit issued by a Nationalized / Scheduled bank located in India or a bank located abroad in the form provided in the bidding documents.
OR	
(b)	A Banker's cheque or Account Payee demand draft in favour of the purchaser.

2.12.6 The performance security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.

2.12.7 In the event of any contract amendment, the supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the performance security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.

2.12.8 The order confirmation should be received within 15 days from the date of notification of award. However, the Purchaser has the powers to extend the time frame for submission of order confirmation and submission of Performance Security (PS). Even after extension of time, if the order acceptance and PS are not received, the contract shall be cancelled and limited tenders irrespective of the value would be invited from the responding firms after forfeiting the bid security of the defaulting firm, where applicable provided there is no change in specifications. In such cases the defaulting firm would not be considered again for re-tendering in the particular case.

2.12.9 Whenever, the bidder chooses to submit the Performance Security in the form of Bank Guarantee, and then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

2.13 Installation, Commissioning, Demonstration, Inspections and Tests

Bidder shall be responsible for Installation, Commissioning, Demonstration, Inspections and Tests wherever applicable and for after sales service during the warranty and thereafter as specified in Chapter 4.

2.14 Packing

2.14.1. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

2.14.2. The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser.

2.15 Delivery and Documents

2.15.1. Delivery of the Goods and completion and related services shall be made by the Supplier in accordance with the terms specified by the Purchaser in the contract. The details of shipping and/or other documents to be furnished by the supplier are as given below or /and as specified in SCC.

Details of Shipping and other Documents to be furnished by the Supplier are :

A) For goods manufactured or supplied from within India

Within 24 hours of dispatch, the supplier shall notify the purchaser the complete details of dispatch and also supply following documents by registered post / speed post and copies thereof by FAX/email

- (a) Three copies of Supplier's Invoice indicating, inter-alia description and specification of the goods, quantity, unit price, total value

- (b) Packing list
- (c) Certificate of country of origin
- (d) Insurance certificate, if required under the contract
- (e) Railway receipt/Consignment note
- (f) Manufacturer's warrantee certificate and in-house inspection certificate, if any
- (g) Inspection certificate issued by purchaser's inspector, if any
- (h) Any other document(s) as and when required in terms of the contract

NOTE:

- 1 The nomenclature used for the item description in the invoice(s), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s).
- 2 The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.

B) For goods manufactured or supplied from abroad

Within 24 hours of dispatch, the supplier shall notify the purchaser the complete details of dispatch and also supply following documents by Registered Post / courier and copies thereof by FAX.

- (a) Three copies of supplier's Invoice giving full details of the goods including quantity, value, etc.
- (b) Packing list
- (c) Certificate of country of origin
- (d) Manufacturer's warrantee and Inspection certificate, if any
- (e) Inspection certificate issued by the Purchaser's Inspector, if any
- (f) Insurance Certificate, if required under the contract
- (g) Name of the Vessel / Carrier
- (h) Bill of Lading / Airway Bill
- (i) Port of Loading
- (j) Date of Shipment
- (k) Port of Discharge & expected date of arrival of goods
- (l) Any other document(s) as and when required in terms of the contract

NOTE:

- 1 The nomenclature used for the item description in the invoice(s), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s).
- 2 The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.

The clearing of the consignment at Mumbai Airport shall be done by our authorized Custom House Agents (CHA). The corresponding shipping documents may be forwarded to them accordingly. It is advised to give us and our CHA, a pre-alert before the consignment is dispatched. If there is delay in clearing of the consignment for not giving timely pre-alert then demurrage (Ware house charges), if applicable has to be refunded to us.

- 2.15.2. The terms FOB, FCA, CIF, CIP etc. shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce (ICC), Paris.
- 2.15.3. The mode of transportation shall be as specified in SCC.
- 2.15.4. The Bidders may please note that the delivery of the system should be strictly within delivery schedule mentioned in the Chapter-4 / Purchase Order.
- 2.15.5. Goods should not be dispatched until the vendor receives a firm Purchase Order

2.16 Insurance

- 2.16.1. Indigenous goods, the Goods supplied under the Contract shall be fully insured in Indian Rupees against any loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in SCC.
- 2.16.2. Where delivery of the goods is required by the purchaser on CIF / CIP basis for imported goods or FOR destination for Indigenous goods, the supplier shall arrange and pay for Marine / Transit Insurance, naming the purchaser as beneficiary and initiate & pursue claims till settlement, in the event of any loss or damage.
- 2.16.3. Where delivery is on FOB or FCA basis for imported goods or FOR dispatch station for indigenous goods, then insurance would be the responsibility of the purchaser.
- 2.16.4. The equipments to be supplied will be insured by the supplier against all risks of loss or damage from the date of shipment till such time it is delivered at CSIR-NAL site in case of Rupee transaction
- 2.16.5. With a view to ensure that claims on insurance companies, if any, are lodged in time, the Bidders and / or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the Bidder / Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the Purchaser on the event of the delay.

2.17 Transportation

- 2.17.1. Where the Supplier is required under the Contract to deliver the Goods on FOB basis, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price. Where the Supplier is required under the Contract to deliver the Goods on FCA basis, transport of the Goods and delivery into the custody of the carrier at the place named by the Purchaser or other agreed point shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price.
- 2.17.2. Where the Supplier is required under the Contract to deliver the Goods CIF or CIP, transport of the Goods to the port of destination or such other named place of destination in the Purchaser's country, as shall be specified in the Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.
- 2.17.3. In the case of supplies from within India, where the Supplier is required under the Contract to transport the Goods to a specified destination in India, defined as the Final Destination, transport to such destination, including insurance and storage, as specified in the Contract, shall be arranged by the Supplier, and the related costs shall be included in the Contract Price.

2.17.4. The clearing of the consignment at Mumbai Airport shall be done by our authorized Custom House Agents (CHA) for CIP / CIF consignments. The details of CHA will be given in the Purchase Order. The corresponding shipping documents may be forwarded to them accordingly. It is advised to give us and our CHA, a pre-alert before the consignment is dispatched. If there is delay in clearing of the consignment for not giving timely pre-alert then demurrage (Ware house charges), if applicable has to be refunded to us by the Supplier / Indian Agent or the same will be deducted from any payment due to Supplier / Indian Agent against this order or any other Purchase order.

2.18 Incidental Services

The supplier may be required to provide any or all of the services, including training, if any, as specified in **Chapter 4: Clause-4.2.**

2.19 Spare Parts

The Supplier shall be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

(a)	Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
(b)	In the event of termination of production of the spare parts:
	(i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
	(ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

2.20 Warranty

- a) The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- b) The Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.
- c) **Unless otherwise specified in the SCC**, the warranty shall remain valid for Thirty Six (36) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for Forty Two (42) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.
- d) The warranty on the associated software should cover providing of upgraded version/s, if any, released during the warranty period free of cost.
- e) The bidder shall assure the supply of spare parts after warranty is over for maintenance of the equipment supplied if and when required for a period of 10 years from the date of supply of equipment on payment on approved price list basis.
- f) The equipment must be supported by a Service Centre manned by the principal vendor's technical support engineers. The support through this Centre must be available 24 hours in a day, seven days a week and 365 days a year. Also it should be possible to contact the Principal's vendor support Centre on a toll free number/web/mail.
- g) An undertaking from the manufacturer is required in this regard stating that they would facilitate the Bidder, Service provider on regular basis with technology / product updates & extend support for the warranty as well.
- h) Supplier will have to arrange for all the testing equipment & tools required for installation, testing & maintenance etc.
- i) The Principal Supplier must have a local logistics support by maintaining a local spares depot in the country of deployment of the equipment. This is to ensure immediate delivery of spares parts from Principal Supplier of equipment to its channel partner/system integrator.

- j) Details of onsite warranty, Name of Agency that shall maintain during warranty and undertake Annual Maintenance Contract/Comprehensive Service Maintenance Contract beyond warranty shall be given in the offer. In case of foreign quote, the name of Indian Agent who shall maintain during warranty and AMC beyond warranty shall be given in the Technical Offer.
- k) The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- l) Upon receipt of such notice, the Supplier shall, within a reasonable period of time, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- m) If having been notified, the Supplier fails to remedy the defect within a reasonable period of time; the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.
- n) In case the Equipment / System remains non-operational or performs below the desired level for more than 1 week after intimation of the fault in the Equipment / System then Warranty period shall be extended for further period for which Equipment / System remained non-operational or performed below the desired level, without prejudice to any other terms and conditions of the Contract.
- o) The defects, if any, during the warranty period are to be rectified free of charge by arranging free replacement wherever necessary.
- p) In case of any replacement during the warranty period the same shall be made free of cost i.e. DDP for import replacement and/or free delivery to NCL for indigenous replacement. All the duties / taxes relating to these replacements have to be borne by the supplier. Dispatch details of such warranty replacements have to be informed in advance to enable us to provide documents for custom clearance.
- q) Any replacements during warranty period should be free of cost. If the defective item has to be sent back to the Principal Supplier, for such replacements / returns to the Principal Supplier / Indian Agent has to bear documentation charges. If the cost of replacement is upto Rs. 5 Lakh then the documentation charges will be Rs. 5,000 and above Rs. 5 Lakh it is Rs. 10,000. Such charges have to be paid in favour of The Director, CSIR-NAL, Bengaluru. These charges are only for documentation. Any charges regarding packing, forwarding, freight, insurance, etc. should be borne by the Principal supplier / Indian Agent for returning of defective items. In other words, any warranty replacement has to be done immediately/within a week (7 days) without expecting CSIR-NAL to export the defective items to Principal supplier for repair/replacements. All charges involved for re-export of defective items have to be borne by Principal supplier / Indian Agent.

2.21 Terms of Payment

- 2.21.1. The method and conditions of payment to be made to the Supplier under this Contract shall be as specified in the SCC.
- 2.21.2. The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to Delivery and document Clause of the GCC and upon fulfilment of other obligations stipulated in the contract.
- 2.21.3. Payments shall be made promptly by the Purchaser but in no case later than thirty (30) days after submission of the Invoice or claim by the Supplier.
- 2.21.4. Payment shall be made in currency as indicated in the contract.

2.22 Change Orders and Contract Amendments

2.22.1. The Purchaser may at any time, by written order given to the Supplier pursuant to Clause on Notices of the GCC make changes within the general scope of the Contract in any one or more of the following:

a)	Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
b)	The method of shipping or packing;
c)	The place of delivery; and/or
d)	The Services to be provided by the Supplier.
e)	The delivery schedule.

2.22.2. If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be ascertained within fifteen (15) days from the date of the Supplier's receipt of the Purchaser's change order.

2.22.3. No variation or modification in the terms of the contract shall be made except by written amendment signed by the parties.

2.23 Assignment

The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

2.24 Subcontracts

The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or duties or obligation under the Contract.

2.25 Extension of time

2.25.1. Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the Delivery schedule specified by the Purchaser.

2.25.2. If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without penalty, in which case the extension shall be ratified by the parties by amendment to the Contract.

2.25.3. Except as provided under the Force Majeure clause of the GCC, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to Penalty Clause of the GCC unless an extension of time is agreed upon pursuant to above clause without the application of penalty clause.

2.26 Penalty clause

Subject to GCC Clause on Force Majeure, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services or contract value for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the Percentage specified in SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause on Termination for Default. The SCC shall also indicate the basis for ascertaining the value on which the penalty shall be applicable.

2.27 Termination for Default

2.27.1. The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

(a)	If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause on Extension of Time;
(b)	If the Supplier fails to perform any other obligation(s) under the Contract
(c)	If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent or collusive or coercive practices as defined in GCC Clause on Fraud or Corruption in competing for or in executing the Contract.

2.27.2. In the event the purchaser terminates the contract in whole or in part, he may take recourse to any one or more of the following action:

(a)	The Performance Security/EMD will be forfeited;
(b)	The Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods similar to those undelivered, and the supplier shall be liable for all available actions against it in terms of the contract.
(c)	However, the supplier shall continue to perform the contract to the extent not terminated.

2.28 **Force Majeure**

2.28.1. Notwithstanding the provisions of GCC Clauses relating to Extension of Time, Penalty and Termination for Default the Supplier shall not be liable for forfeiture of its Performance Security, Liquidated Damages or Termination for Default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

2.28.2. For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

2.28.3. If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within 21 days of its occurrence. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

2.28.4. If the performance in whole or in part or any obligations under the contract is prevented or delayed by any reason of Force Majeure for a period exceeding 60 days, either party may at its option terminate the contract without any financial repercussions on either side.

2.29 **Termination for Insolvency**

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

2.30 **Termination for Convenience**

2.30.1. The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

2.30.2. The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

(a)	To have any portion completed and delivered at the Contract terms and prices ; and / or
(b)	To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods / Services and for materials and parts previously procured by the Supplier.

2.31 Settlement of Disputes

2.31.1. The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

2.31.2. If, after twenty-one (21) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. .

2.31.3. The dispute settlement mechanism / arbitration proceedings shall be concluded as under:

(a)	In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director General, Council of Scientific & Industrial Research and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to the Contract.
(b)	In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration In accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

2.31.4. The venue of the arbitration shall be the place from where the Purchase Order or Contract is issued.

2.31.5. Notwithstanding any reference to arbitration herein,

(a)	the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree;	and	the Supplier shall pay the Supplier any monies due the Supplier.
(b)	the Purchaser shall pay the Supplier any monies due the Supplier.		

2.32 Governing Language

The Contract shall be written in English language which shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the English language only.

2.33 Applicable Law / Jurisdiction

The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction as specified in SCC.

2.34 Notices

2.34.1. Any notice given by one party to the other pursuant to this contract / order shall be sent to the other party in writing or by cable, telex, FAX, e-mail or / and confirmed in writing to the other party's address specified in the SCC.

2.34.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

2.35 Taxes and Duties

2.35.1. For goods manufactured outside India, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside India.

- 2.35.2. For goods Manufactured within India, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred till its final manufacture / production.
- 2.35.3. If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in India, the Purchaser shall make its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.
- 2.35.4. All payments due under the contract shall be paid after deduction of statutory levies (at source) (like ESIC, IT, etc.) wherever applicable.

2.36 Right to use Defective Goods

If after delivery, installation and within commissioning & acceptance and within warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

2.37 Protection against Damage

The system shall not be prone to damage during power failures and trip outs. The normal voltage and frequency conditions available at site as under:

- (a) Voltage 230 volts – Single phase or 415 Volt for 3 phase ($\pm 10\%$)
- (b) Frequency 50 Hz.

2.38 Site preparation and installation

The Purchaser is solely responsible for the construction of the equipment sites unless otherwise specified in Chapter 4 in compliance with the technical and environmental specifications defined by the Supplier. The Purchaser will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of the Equipment, if required. The supplier shall inform the purchaser about the site preparation, if any, needed for installation, of the goods at the purchaser's site immediately after notification of award / contract.

2.39 Integrity Pact

- 2.39.1. As per directive of the CVC all organizations including CSIR laboratories / institutes have to adopt an Integrity pact (IP) to ensure transparency, equity and competitiveness in major Public procurement having procurement value above Rs.3 Crore. The integrity pact envisages an agreement between the prospective bidders / vendors with the buyer committing the persons / officials of both the parties with the aim not to exercise any corrupt influence on any aspect of the contract. Only those bidders / vendors, who are willing to enter in to such an integrity pact with the Purchaser, would be competent to participate in the bidding.
- 2.39.2. IP also envisages Panel of Independent External Monitors (IEMs) which shall be provided / recommended by CSIR / its labs and institutes with the approval of by CVC.
- 2.39.3. The integrity Pact would be effective from the date of invitation of bids till complete execution of the contract.
- 2.39.4. **The SCC shall specify whether there is a need to enter into a separate integrity pact or not.** If the Integrity Pact is required for the Tender then the format of Integrity Pact is as given in **Chapter – 8**.

CHAPTER 2

B. SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC Clause	Special Condition of Contract (SCC)
GCC 2.1.1(l)	The Purchaser is: The Director CSIR- National Aerospace Laboratories HAL Airport Road, Kodihalli, Bengaluru - 560017 Karnataka-India
GCC 2.1.1(m)	The Final Destination is: CSIR- National Aerospace Laboratories HAL Airport Road, Kodihalli, Bengaluru - 560017 Karnataka-India
GCC 2.15.3	Delivery – Mode of Shipment: (a) In case of supplies from within India, the mode of transportation shall be by Road . (b) In case of supplies from abroad, the mode of transportation shall be by AIR
GCC 2.13.1	Performance Security/Performance Bank Guarantee The amount of the Performance Bank Guarantee shall be 10% of the contract value (including taxes) , to be submitted within 21 days from the date of PO valid up to 60 days after the date of completion of performance obligations including warranty obligations.
GCC 2.16.1	Insurance The Insurance shall be for an amount equal to 110% of the CIF or CIP value of the contract from within “warehouse to warehouse (final destination)” on “all risk basis” including strikes, riots and civil commotion, in addition to storage policy for 60 days is advised so as to ensure the inspection by the Indian Agent at the time of opening the packages.
GCC 2.20.3	Warranty: The period of validity of the Warranty shall be: The warranty shall remain valid for Two Years (24) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted by CSIR-NAL at the final destination.
GCC 2.21.1	Payment Details: The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:
	A Payment for Goods and Services supplied from India: The payment shall be made in Indian Rupees, as follows: (a) 70% of the PO value payable against supply of ordered items and confirmation of receipt of the items as accepted by the End-user. (b) 30% of the PO value after completion of installation, commissioning and acceptance, subject to validity of Performance Security. (c) E-Payment: All payments, CSIR-NAL prefers to make Electronic Transfers (RTGS) through State Bank Of India, NAL Branch, Bengaluru.
	NOTE: ➤ All payments due under the Contract shall be paid after deduction of statutory levies at source (like ESIC, Income Tax, etc.), wherever applicable.
GCC 2.27.1	Liquidated Damages / Penalty Clause (a) As time is the essence of the contract, Delivery period mentioned in the Purchase Order should be strictly adhered to. Otherwise the bidder will forfeit EMD/SD and also LD clause will be applicable /enforced (b) If the supplier fails to Supply, Install and Commission the system as per specifications mentioned in the order within the due date, the Supplier is liable to pay liquidated damages of 0.5% of order value per every week of delay subject to a maximum of 5% beyond the due date. Such money will be deducted from any amount due or which may become due to the supplier

	(c)	CSIR-NAL reserves the right to cancel the order in case the delay is more than 10 weeks. Penalties, if any, will be deducted from the Security Deposit
	(d)	The maximum amount of penalty shall be 5% .
	(e)	The liquidated damages shall be levied on the delivered price of the delayed Goods or unperformed Services or contract value.
GCC 2.34.1	Applicable Law / Jurisdiction The place of jurisdiction is Bengaluru , India.	
GCC 2.35.1	Notices For notices, the Purchaser's address is The Director CSIR- National Aerospace Laboratories PB No.1779, HAL Airport Road, Kodihalli, Bengaluru – 560017 Karnataka-India Tel #: 00 91 80 25086040/6041/6044 Fax #: 00 91 80 25269611 Email: purchasek@nal.res.in , mkala@nal.res.in	
GCC 2.41	Integrity Pact is not to be signed. However, efforts must be made to realize the objectives and spirits thereof.	

CHAPTER 3

(To be filled by the bidder and enclosed with the Technical Bid)

SCHEDULE OF REQUIREMENT:

[The bids are invited in 3 packages under the detailed scope of works specified clause no. 4.1, 4.2 & 4.3 of chapter – 4. The lowest bid will be selected among qualified bids / offer under each packages on turnkey basis. However, the qualification criteria & EMD will be remains same for all the packages. Hence it is advised all the bidders to goute each package separately as per the format specified under chapter – 6A & 6B](#)

The Schedule of Requirement must clearly specify **the time frame required (Schedule) for delivery of goods and services to be completed** by the bidder (in reference to Scope of Supply given in Clause-4.2 of Chapter-4) if the Contract is awarded for the offer / proposal submitted by the bidder in response to this Tender.

A) Delivery Schedule:

Sr. No.	Brief Description of Goods and Services	Quantity & Unit	Delivery Schedule

Period of delivery shall start from : _____

B) Term of delivery / Delivery Term :

Goods from Abroad

Goods from India

C) Time frame required for conducting installation, commissioning of the equipment, acceptance test, training, etc. after the arrival of consignment or before dispatch of equipment:

Sr. No.	Activity	Time Frame
1	Site Preparation (if required)	
2	Installation & Commissioning	
3	Acceptance Test	
4	Training	

Place : _____

Signature of the Bidder : _____

Date : _____

CHAPTER 4

SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

4.1 Detailed Specifications (Package -1)

Replacement of existing Old Centralized Air Conditioning Plant by 32 HP VRF /VRV Air Conditioning system with associated equipment at CNSSU Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017

INTRODUCTION: (Brief Description of existing system)

The existing 40 Tr. capacity Voltas make centralized type air-conditioner plant was installed during the year 1983-84 for providing air-conditioning facility for the area around **395 Sq. M** to CNSSU Division at Kodihalli. The AC plant consisting of 2 no. of 40 TR. open type compressor coupled with 50 HP induction motor, water-cooled condenser & air handling units (AHU). The evaporator & condensing units are interconnected using MS refrigerant pipe filled with R-22 refrigerant. Also the necessary electrical control panel, safety valves and other sub-system is built-in as per standard practice for HVAC facility. The conditioned air is being distributed with necessary supply air ducts made out of GI sheets, volume control diffusers, dampers etc as required.

Now it is planned to replace this existing AC plant with 32 HP capacity VRV / VRF system having ceiling mounted cassette type indoor units for the reduced area around **210 Sq. M**. The necessary refrigerant lines required for interconnection between outdoor & indoor units have been considered as required & scope of works & BOQ as specified under on turnkey basis & the details are as follows:

4.1.1 SYSTEM

SCOPE OF WORK: Replacement of existing Old Centralized Air Conditioning Plant by 32 HP VRF /VRV Air Conditioning system with associated equipment at CNSSU Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

Supply, installation, testing and commissioning of factory built Air cooled Variable Refrigerant Volume (VRV) / Variable Refrigerant Flow (VRF) system with INVERTOR COMPRESSOR (VRV). The outdoor unit shall be designed to work on Variable refrigerant circulation depending on actual load sensing. The unit shall be consisting with inverter compressors whose capacity is variable in each outdoor model. The variable capacity compressor shall be of inverter control as per manufacturer design to meet the total capacity. The condenser coil and condenser fans shall be sized to work even at 52 °C ambient without tripping. The condenser fins shall be coated with anti-corrosive material for long life. The unit shall be of oil arrester to prevent oil migration. Suction accumulator and liquid receiver shall be provided to balance variable refrigerant circulation. The unit shall also meet CPCB norms on noise and air pollution levels as per applicable standards. The system shall operate with only two pipes i.e., suction and liquid line that can be connected to multiple indoor units. The necessary microprocessor based control system shall maintain the communication between indoor and outdoor units to operate the compressor in most efficient way and to keep the equal running time for constant speed compressors. The unit shall work with R-410A / R – 407C refrigerant gas 415 V 3 phase 50Hz AC supply.

OUT DOOR UNITS & INDOOR UNITS:

Outdoor unit (ODU) capacity shall be of 32 HP cooling capacity in combination of not more than 1 unit and suitable electrical & refrigerant interconnection with necessary control cable & refrigerant suction/liquid line tapping, initial charge of Refrigerant R 410A / R – 407C etc., all complete and ready

for use., as required. The outdoor units shall be modular type equipped with highly efficient optimized scroll compressors having inverter technology, heat exchanger, dc inverter fan motor low noise hot gas by pass arrangement in order to prevent the flow of liquid gas in to the compressor, oil separator at the discharge side of the compressor, oil pump at the bottom of the compressor motor in order to keep the motor at low temperature even during part load condition. Outdoor shall be provided with necessary electrical control panel, fault detection system refrigerant of R410A / R – 407C etc., all complete as required.

The indoor units shall be of cassette mounted type of suitable rated as specified in the BOQ and inter connected using necessary copper refrigerant line & required accessories.

- ❖ Dismantling of existing air-conditioning plant comprising of compressors, heat exchangers, MS refrigerant line including all accessories, Air handling units, CI water pipe lines including all accessories such as valves, dismantling of existing GI ducts including civil works, if any all complete under buy-back scheme.
- ❖ Design, Supply, installation, testing and commissioning of. New 32 HP cooling capacity energy efficient air cooled VRV / VRF Air-conditioning plant with suitable rated cassette type indoor as per BOQ including refrigerant piping with insulation etc., all complete.
- ❖ Supply, install & provide under deck insulation for the ceiling.
- ❖ Minor Civil works if any as per the site requirement.
- ❖ **The necessary false ceiling using Armstrong of size 600 x 600 grid will be carried out by other agency under the supervision of CSIR – NAL Civil Engineering department. If any modifications / alteration to mount AC units shall be carried out by Air-conditioner vendors as required**
- ❖ **The scope of work shall be read in accordance with detailed specifications and drawing enclosed as specified in the work for completion of work.**

4.1.1.1 DESIGN DATA:

4.1.1.2 OUTSIDE CONDITIONS:

4.1.1.2.1	Summer	42 deg C
4.1.1.2.2	Monsoon	29 deg C
4.1.1.2.3	Winter	20 deg C

4.1.1.3 INSIDE CONDITIONS TO BE MAINTAINED:

4.1.1.3.1	Summer	22 ± 2 deg C
4.1.1.3.2	Monsoon	22 ± 2 deg C
4.1.1.3.3	Winter	22 ± 2 deg C

4.1.1.4 Details of data required to design AC system for CNSSU:

4.1.1.4.1	Area to be Air-conditioned	: 210 Sq.m.
4.1.1.4.2	Room Location	: CNSSU at Ground floor. (To reduce the heat load, roof insulation is proposed)
4.1.1.4.3	Total Height of ceiling	: 3.0 m high.
4.1.1.4.4	No. of Occupancy	: 10 persons
4.1.1.4.5	Air change rate	: 2 times /hour.
4.1.1.4.6	Lighting load	: 1 watt per sq.ft.
4.1.1.4.7	Total Equipment Load	: 45 HP at a load at load factor 0.4.
4.1.1.4.8	Proposed capacity of Air conditioning plant:	* 32 HP VRF / VRV with suitable rated indoor unit.

- 4.1.1.4.9 Operation of the proposed plant : 24 x 7 hours.
- 4.1.1.4.10 Standby : nil
- 4.1.2 DRAWINGS.**
- 4.1.2.1 The layout plan of area to be air-conditioned is enclosed.
- 4.1.2.2 No other drawings shall be made available. **The contractor / vendor shall visit the site and discuss with the Engineer-in-charge for any other details that he may need before submitting the offer.**
- 4.1.2.3 Provisional General Arrangement drawings has to be prepared, showing the area to be air-conditioned & space need for installation of new equipment shall be checked visiting the site before offer is submitted.
- 4.1.2.4 The enclosed drawings represent existing air distribution duct layout. This arrangement can be changed / rearranged as per site / architectural requirements in consultation with prior approval of Engineer-in-charge.
- 4.1.2.5 **These are not working drawings. The vendor shall prepare detailed working drawings & execute the work as per working drawings approved by the Engineer-in-charge.**
- 4.1.2.6 **The heat load calculation shall be prepared and submitted by the vendor along with the offer.**
- 4.1.2.7 The scope of work and their quantities mentioned in the schedule of work is tentative. The vendor may submit their offer with the nearest next higher tonnage of plant, and other sub-systems that are available in the market to achieve the system requirements and shall be indicated in the technical bid for consideration and evaluation. However, any bids lower than specified capacity will not be acceptable & liable for rejection.
- 4.1.2.8 If any deviations, the tenderer advised to quote separately. Such cases, the deviated items will be evaluated by CSIR-NAL authorities for acceptance / rejection.
- 4.1.2.9 All the measurable quantities of items will be measured as per the final design and as per actuals at the time of execution as per the site requirement.
- 4.1.2.10 The Vendors are free to quote, if any items of works need to be added or suggested to suite the various make of air-conditioning plants with other accessories as per the manufactures recommendations may be enclosed along with technical bid and the same may be quoted separately.
- 4.1.2.11 **Selection of vender shall be on turnkey basis of entire scope of work specified in the BOM.**

4.1.3 Scope of Supply

Name of the work: Replacement of Existing Old Centralized Air Conditioning Plant by VRF /VRV Air Conditioning system with associated equipment at CNSSU Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

Sl. No	Description	Unit	Qty	Rate in `	Amount in `
SUB HEAD - A (EQUIPMENTS)					
1	Design, manufacturing & supply of 32 HP capacity outdoor units, air cooled VRF / VRV system working in R-410A / R -407C or equivalent refrigerant. The system shall be suitable to operate on 3 phase, 380-415 V, 50Hz AC power supply & shall comprises with multiple no's of inverter, digital scroll compressors, air cooled condenser fan with motor, microprocessor control panel, starter controls for all scroll compressors and condenser fan motors along with internal control and power wiring, cooling coil with internally interconnected refrigerant pipes for interconnecting various capacity modules (to make unit of 32 HP), charging port and all other required accessories, & hardware's. All complete shall be enclosed in an enclosure. The entire unit shall be with weather resistant powder coating paint for withstanding all ambient conditions for continuous outdoor operation.	Set	1		
2	Design, manufacturing & supply of following air cooled type four directional air flow DX Cassette type Indoor Air Conditioning Units of following capacity suitable for mounting inside false ceiling, each comprising of cooling coil, blower with multi speed motor, electronic expansion valve, supply & return air grilles, filter, insulated connection of refrigerant circuit, provision for fresh air intake ducting, condensate water drain pump with electronic level sensor, including wireless remote controller etc. All the indoor units shall be compatible to work with VRV / VRF type condensing unit.				
2.1	1.5 TR ceiling suspended unit having 4 way / rounded uniform air flow with Cordless Remote controller as required.	Nos	5		
2.2	2.0 TR ceiling suspended unit having 4 way / rounded uniform air flow with Cordless Remote controller as required.	Nos	8		
3	Design, manufacturing & supply of variable refrigerant flow distribution REFNUTS (Y - Joints) in the suction & liquid lines.	Pair	15		
4	Supply of communication cabling of 4 core x 1.5 Sq.mm multi strand screened shielded copper control cabling to have interface between controller to individual unit covered. (The size & make of the cable will be acceptable as per the OEM recommendations)	Meter	50		

Sl. No	Description	Unit	Qty	Rate in `	Amount in `
5	<p>Design & supply of refrigerant copper piping insulated with 19 mm / 13 mm thick Nitrile rubber of following sizes between outdoor unit to indoor units as per the specifications. The refrigerant pipe shall be hard drawn / soft drawn copper pipe as per manufacture recommendations. The quantity of these items of works shall be measured as per actuals requirements of site conditions.</p> <p>The vendor shall accept the accepted rate as per the actual measured quantities.</p> <p>The size of refrigerant pipes shown below are tentative. The required size of pipe shall be designed by the vendor as per the manufacturer recommendations.</p>				
5.1	34.9 mm OD (insulation 19 mm thick)	Meter	40		
5.2	28.6 mm OD (insulation 19 mm thick)	Meter	20		
5.3	22.2 mm OD (insulation 13 mm Thick)	Meter	26		
5.4	19.1 mm OD (insulation 13 mm Thick)	Meter	46		
5.5	15.9 mm OD (insulation 13 mm Thick)	Meter	46		
5.6	12.7 mm OD (insulation 13 mm Thick)	Meter	20		
5.7	9.5 mm OD (insulation 13 mm Thick)	Meter	60		
5.8	6.35 mm OD (insulation 13 mm Thick)	Meter	20		
6	<p>Supply of following sizes PVC drain water / fresh air arrangement pipe including bends, collars & elbow etc, all complete and duly insulated with 9 mm thick tubular insulation of closed cell elastomeric nitrile rubber as required</p>				
6.1	32 mm Ø PVC	Meter	100		
6.2	50 mm Ø PVC	Meter	50		
7	Supply of 8 SWG GI wire for earthing.	Meter	50		
8	<p>Supply of 415V, 50Hz AC power supply, Power Control Centre (PCC) with suitable rated Tinned TPN copper bus bar. The PCC shall be provided with following:</p> <p>Incoming:</p> <ul style="list-style-type: none"> ▶ 400 A, 25 kA 3P MCCB with thermal magnetic releases with O/L, S/C protection & shunt trip of make ABB / Schneider Electric / Siemens / GE make - 2 Nos <p>Outgoings:</p> <ul style="list-style-type: none"> ▶ 100 A, 3P, 16 kA MCCB with thermal magnetic releases with O/L, S/C protection of make ABB/Schneider Electric/Siemens /GE make - 5 Nos ▶ 63A, 3P, 16 kA MCCB with thermal magnetic releases with O/L, S/C protection of make ABB/Schneider Electric/Siemens /GE make - 5 Nos ▶ Star-Delta starter suitable for 3 phase, 25 HP / 18.75 KW consisting of 63 A MPCB with ROHM, suitable rated AC-3 duty power contactors (main, star & delta) with auxiliary contacts, ON/OFF illuminated push buttons with trip indication & control SP MCB etc., all complete. All the components shall be wired using necessary copper wires as required. The make of the all the above component shall be Schneider Electric / Seimens / ABB / GE - 1 No. ▶ DOL starter suitable for 3 phase, 5 HP / 3.7 KW consisting of 32 amps MCCB & suitable rated MPCB with ROHM, 3P, power contactor with auxiliary contacts, ON/OFF illuminated push buttons with trip indication & 	Set	1		

Sl. No	Description	Unit	Qty	Rate in `	Amount in `
	control SP MCB etc, all complete. All the components shall be wired using necessary copper wires as required. The make of the all the above component shall be Schneider Electric / Seimens / ABB / GE. – 5 Nos. Indication Lamps & measuring Instruments for incoming feeder: <ul style="list-style-type: none"> ● LED type indication lamps. – 1Set. ● Multi data digital meter. – 1No. ● Suitable rated CTs. – 1 Set. All the above components shall be incorporated in suitable size of enclosure made out of using 2.0 & 1.6 mm thick combinations CRCA sheet steel having IP 20 protection necessary powder coated painting, the PCC shall be compact, and modular floor mounted type and dead front version. The suitable size Aluminium bas bar shall be provided at bottom of the PCC for earthing as required. The necessary cable alloy with suitable rated ELMEX bolt & nut type connectors shall be provided for all the outgoing feeders for terminating incoming and outgoing power and control cables. <u>The GA of the PCC shall be got approved before fabrication.</u> The PCC panel builder of shall be Load controls / Lotus power gear / Ellins switch board / ENCONPASS / Switchgear & control technique.				
9	Supply of 4C x 25 Sq.mm XLPE Insulated, cores laid up, tape PVC inner sheathed, round armored aluminium conductor power cable of 1.1kV grade as per IS -7098 (part-I)-1988, of make Universal / Nicco / Gloster / Torrent / Primecab / Polycab/ Lapp India.	Meter	150		
10	Supply of end termination kit with brass compression gland and aluminium lugs for 4 X 25 sq. mm (28mm) size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required. The cable gland shall be Comex / Comet / Jainson make and Lugs / sockets shall be: 3D / Dawells / Jainson make as required.	Each	6		
11	Supply of 100 mm width X 50 mm depth X 1.6 mm thickness of perforated Hot Dipped Galvanized Iron cable tray (galvanization thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections.	Meter	100		
12	Supply of 100 mm width X 50 mm depth X 1.6 mm thickness of perforated Hot Dipped Galvanized Iron cable tray “bends” (galvanization not less than 50 microns) with perforation not more than 17.5%, in convenient sections.	Each	4		
Sub-total - A					
SUB HEAD - B (INSTALLATION)					
13	Installation (lifting to position), testing & commissioning of 32 HP capacity outdoor units, air cooled VRF/VRV system working in R-410A / R -407C or equivalent refrigerant specified under item -1. The systems shall be internally interconnected refrigerant pipes for interconnecting various modules (to make unit of 32 HP), charging port, first charge of refrigerant as system required and all other required accessories, hardware's like T joints etc, all complete shall be enclosed in an enclosure. The VRF/ VRV	Set	1		

Sl. No	Description	Unit	Qty	Rate in `	Amount in `
	<p>system shall be provided with mounting base and anti-vibration mountings.</p> <p>All the accessories, hardware, software, consumables etc. whether specifically mentioned or not but required to put the VRF / VRV HVAC systems into service to the entire satisfaction of the CSIR-NAL including testing, commissioning as per specifications, site constraints shall be included by the bidder in the scope of the work. Nothing extra shall be payable for these systems under any circumstances. All the consumables including first charge of refrigerant (R-410A / R - 407C) and oil for the proposed VRF / VRV system shall be under the scope of the bidder. The topping of refrigerant and oil shall also be included in the quoted price for arresting leakages if any.</p> <p>The outdoor unit shall be installed on terrace of the ground floor building. The unit shall be lifted using crane / sufficient manpower and installed on suitable pedestal / MS rail / bots & nuts etc, all complete as requirement of site conditions.</p>				
14	<p>Installation, testing & commissioning of following air cooled type four directional air flow DX Cassette type Indoor Air Conditioning Units of following capacity suitable for mounting inside false ceiling with all required supports specified under item no.2, anchor fasteners hardware's, etc. interconnecting refrigerant copper piping, support etc. including power cabling of 3 C x 2.5 sq.mm with 3 pin Plug top in flexible conduit from units to the nearest plug point, control wiring of copper cables and interlocking with outdoor units. All the indoor units shall be compatible to work with VRV / VRF type condensing unit. The bidders shall include all the items required to put the cassette units into services after conducting all the tests as per specifications at no extra costs, whether specifically specified or not.</p>				
14.1	1.5 TR ceiling suspended unit having 4 way / rounded uniform air flow with Cordless Remote controller as required.	Nos	5		
14.2	2.0 TR ceiling suspended unit having 4 way / rounded uniform air flow with Cordless Remote controller as required.	Nos	8		
15	Installation, testing & commissioning of variable refrigerant flow distribution REFNUTS (Y - Joints) as specified under item no.3 to the suction & liquid copper refrigerant lines including insulation if any etc. as required.	Pair	15		
16	Laying, dressing, testing & commissioning of communication cabling of 4 core x 1.5 Sq.mm multi strand screened shielded copper control cabling as specified under item - 4 to interface between controller to individual unit covered with HDPE pipe to be laid on wall / false ceiling/underground and covered ceiling including supporting, clamping etc. all as required.	Meter	50		
17	Installation, testing & commissioning of refrigerant copper piping of sizes as specified under item - 5 including connection between outdoor unit to indoor units as required. The piping shall be laid on walls / roof / ceiling well supported at specific intervals with metallic supports and screwed with anchor fasteners. All the necessary accessories, jointing / brazing etc shall be carried out as				

Sl. No	Description	Unit	Qty	Rate in `	Amount in `
	required. All piping inside the ceiling shall be properly supported using necessary clamps and all externals refrigerant lines shall be properly protected using necessary PVC (HDPE) pipes with accessories to suit the site conditions and the quantity of these items of works shall be measured as per actuals requirements of site conditions. The vendor shall accept the accepted rate as per the actual measured quantities.				
17.1	34.9 mm OD (insulation 19 mm thick)	Meter	40		
17.2	28.6 mm OD (insulation 19 mm thick)	Meter	20		
17.3	22.2 mm OD (insulation 13 mm Thick)	Meter	26		
17.4	19.1 mm OD (insulation 13 mm Thick)	Meter	46		
17.5	15.9 mm OD (insulation 13 mm Thick)	Meter	46		
17.6	12.7 mm OD (insulation 13 mm Thick)	Meter	20		
17.7	9.5 mm OD (insulation 13 mm Thick)	Meter	60		
17.8	6.35 mm OD (insulation 13 mm Thick)	Meter	20		
18	Installation testing & commissioning of following size PVC drain water pipe complete with fittings, accessories and duly insulated using bends, elbows, tees, wall sleeves, hangers, supports, anchors with 9 mm thick tubular insulation of closed cell elastomeric nitrile rubber as required				
18.1	32 mm Ø PVC	Meter	100		
18.2	50 mm Ø PVC	Meter	50		
19	Laying of 8 SWG GI wire for earthing from MCC panel to ODU as per site requirement	Meter	50		
20	Installation, testing and commissioning of 415 V, 50 Hz AC power supply, Power Control Centre (PCC) per standard practice as specified under item - 8 . The PCC shall be installed with necessary foundation made out of C Channel / bricks / stones / RCC as per the site requirement. Necessary cable duct shall be made available to draw incoming / outgoing cables from the PCC as per the site requirement complete. as per stranded The incoming power supply to the PCC will be provided by NAL.	Set	1		
21	Laying of 4C x 25 Sq.mm XLPE Insulated, cores laid up, tape PVC inner sheathed, round armored aluminium conductor power cable of 1.1kV grade as per IS -7098 (part-I)-1988, from existing panel to outdoor unit.	Meter	150		
22	Making of end termination with brass compression gland and aluminium lugs for 4 X 25 sq. mm (28mm) size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.	Each	6		
23	Installation of 100 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot Dipped Galvanized Iron cable tray with convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders / laying on wall including G.I. bolts & nuts, etc. as required.	Meter	100		

Sl. No	Description	Unit	Qty	Rate in `	Amount in `
24	Installation of 100 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot Dipped Galvanized Iron cable tray "bends" with convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.	Each	4		
25	Drilling of 100 mm dia bore in stone wall or concrete wall using core cutting machine.	Nos	4		
26	Providing under duct insulation using 50 mm thick thermo coal, adhesive, wire mesh, fixing bolts, clamps and fasteners etc as required.	Sq.m	225		
Sub-total - B					
SUB HEAD - C (Comprehensive maintenance contract)					
27	Comprehensive maintenance contract for 32 HP VRV / VRF air condensing plant comprising of outdoor unit , with 8 Nos of 2.0 TR and 5 Nos of 1.5 TR ceiling suspend cassette mounted type indoor unit, and other associated auxiliaries including repair/replace of refrigerant line refrigerant y joints, and refinishing of refrigerant as and when required to upkeep the plant in good working condition after post warrantee for the period of 2 years. Scope of work: The scope of works shall be involving for attending any no. of breakdowns and 4 Nos. of preventive maintenance services at every quarter per year for all the equipment's connected with the plant. The complaints shall be attended within 24 hours.				
27.1	First Year	Job	1		
27.2	Second Year	Job	1		
27.3	Third Year	Job	1		
Sub-total - C					
SUB HEAD - D (DISMANTLING)					
28	Dismantling of existing under deck insulation and false ceiling made out of thermocoal and aluminium grid section of 600 mm x 600 mm with semi perforated ceiling tiles respectively. The debris shall be removed from the site and shifting to outside of the CSIR-NAL campus as required.	Sq.m	390		
Sub-total - D					
SUB HEAD - E (BUY BACK RATE OF EXISTING ITEM / EQUIPMENTS)					
29	Dismantling existing items of works. The following AC plant & other accessories have to be dismantled and rate to be quoted under buy-back scheme.				
29.1	40 TR open type Voltas make compressor:	No	2		
29.2	40 HP / 30 kW, 415 Volts, 50 Hz induction motor	No	2		
29.3	Floor mounted type condenser unit (heat exchanger) horizontal type	No	2		
29.4	40 TR air handling unit.	No	1		

Sl. No	Description	Unit	Qty	Rate in `	Amount in `
29.5	Supply air ducts including plenum with flanges and other fasteners of various sizes made out GI sheet.	Sq.	180		
29.6	450 mm x 450 mm size Volume controlled supply air grills made out of MS sheet.	Nos.	30		
29.7	380 mm x 380 mm size Volume controlled supply air grills made out of MS sheet.	Nos	34		
29.8	4" MS B Class pipe, 4" Non Return Valve. and other accessories.	Lot	1		
Sub-total - E					
Abstract					
				Sub-total - A	
				Sub-total - B	
				Sub-total - C	
				Sub-total - D	
				Sub-total A + B + C + D	
				Sub-total - E	
				Grand total (Subtotal A + B + C + D) - (Subtotal E)	

LIST OF APPROVED MAKES OF MATERIALS

Sl. No	ITEM	APPROVED MAKE
1	VRF / VRV Systems	Mitsubishi / Hitachi / Trane / Toshiba / Dikin / Blue star / Voltas.
2	Indoors cassette type units	Mitsubishi / Hitachi / Trane / Toshiba / Dikin / Blue star / Voltas
3	Vibration pads	Resistroflex /Dunlop
4	Vibration isolation	Dunlop / Cushy Foot /Resistroflex
5	Refrigerant Pipes	Mandev / Parasmani /Jugal
6	Nitrile Rubber insulation	Hylam / Superlon / Armaflex /Trocellen
7	Power Cables	Universal / Nicco / Gloster / Torrent / Primecab / Polycab / Lapp India
8	Control Cables	Polycab / Finolex / Torrent / RR Kabel / LAPP
9	Panel builder	Load controls / Lotus power gear / Ellins switch board / ENCONPASS / Switchgear & control technique
10	Cable gland	Comex / Comet / Jainson
11	Lugs / sockets	3D / Dawells / Jainson
12	PVC pipe	Supreme / Finolex.

4.1.4 Scope of Supply includes the following:

- (i) Supply of the equipment / system as specified in 4.1 above
- (ii) Installation & Commissioning as specified in 4.3.3 above
- (iii) Training as specified below in 4.4
- (iv) **On site comprehensive Warranty for 2 Year (24 months) as specified in 4.5 (i) below**
- (v) **3 (Three) Year comprehensive maintenance contract after the expiry of 2 - years warranty**

4.1.5 Inspection & Tests

4.1.5.1 General

- (i) The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here. The Supplier shall at its own expense and at no cost to the NAL carry out all such tests and/or inspections of the Goods and Related Services as are specified in the chapter 4 or as discussed and agreed to during the course of finalization of contract.
- (ii) The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the NAL
- (iii) Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- (iv) The NAL or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the NAL and what inspections and tests the NAL requires and where they are to be conducted. The NAL shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes.
- (v) Should any inspected or tested Goods fail to conform to the specifications, the purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- (vi) The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- (vii) The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- (viii) With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their Principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
- (ix) Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- (x) The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract.
- (xi) Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.
- (xii) On successful completion of acceptability test, receipt of deliverables, etc and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment. Acceptance certificate form as given in Annexure-I (Chapter 8) should be signed by authorised representative of Supplier & Purchaser.
- (xiii) Installation demonstration is to be arranged by the supplier and the same is to be done within 15 days of the arrival of the equipment at site.

4.1.6 Manufacturer's Inspection Certificate

After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such Pre- dispatch inspection and testing.

4.1.7 Installation, Commissioning & Acceptance Tests

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

In the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

4.1.8 Training.

1)	Location	CSIR-NAL, HAL airport road, Kodihalli
2)	Number of persons	6 person
3)	Period of Training	1 week
4)	Nature of Training	Operation, maintenance & trouble shooting

4.1.9 Incidental Services

(i) On site Comprehensive Warranty:

- **2 Years (24 months) from Installation & Commissioning and date of acceptance**
- Down-time call attendance should be within 48 hours.
- In case the Equipment / System remains non-operational for more than 7 days then warranty period will be extended for the equivalent period for which Equipment / System remained non-operational. Warranty extension in such case shall be done without prejudice to any other Term & condition of the contract.

4.1.10 Delivery Schedule / Time period for completion: 6 months from the date of approved of drawing.

4.1.11 Commercial evaluation of bid.

The bidder is free to quote. However, any partial quotation of work will be treated as incomplete, which will be liable for rejection. The commercial bids price will be compared and awarded accordingly. **The total price including 3 years CMC (comprehensive maintenance contract after expiry of success full completion of 2 Years warranty) will be considered for evaluation of the lowest price.** The bidder should also quote for all incidental services (clause 4.5). The bid will be commercially evaluated and identified as lowest, as per the scope of works specified in the work.

CHAPTER 4

SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

4.2 Detailed Specification (Package - 2).

Supply, installation, testing and commissioning of 22 HP VRF system Air Conditioning system with associated equipment at FMCD 1st floor Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

4.2.1 SYSTEM

SCOPE OF WORK: Supply, installation, testing and commissioning of 22 HP VRF system Air Conditioning system with associated equipment at FMCD 1st floor Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

Supply, installation, testing and commissioning of factory built Air cooled Variable Refrigerant Flow (VRF) system with INVERTOR COMPRESSOR. The outdoor unit shall be designed to work on Variable refrigerant circulation depending on actual load sensing. The unit shall be consisting with inverter compressors whose capacity is variable in each outdoor model. The variable capacity compressor shall be of inverter control as per manufacturer design to meet the total capacity. The condenser coil and condenser fans shall be sized to work even at 52 °C ambient without tripping. The condenser fins shall be coated with anti-corrosive material for long life. The unit shall be of oil arrester to prevent oil migration. Suction accumulator and liquid receiver shall be provided to balance variable refrigerant circulation. The unit shall also meet CPCB norms on noise and air pollution levels as per applicable standards. The system shall operate with only two pipes i.e., suction and liquid line that can be connected to multiple indoor units. The necessary microprocessor based control system shall maintain the communication between indoor and outdoor units to operate the compressor in most efficient way and to keep the equal running time for constant speed compressors. The unit shall work with R-410A refrigerant gas 415 V 3 phase 50Hz AC supply.

OUT DOOR UNITS & INDOOR UNITS:

Outdoor unit (ODU) capacity shall be of 22 HP cooling capacity in combination of not more than 1 unit and suitable electrical & refrigerant interconnection with necessary control cable & refrigerant suction / liquid line tapping, initial charge of Refrigerant R 410A etc., all complete and ready for use., as required. The outdoor units shall be modular type equipped with highly efficient optimized scroll compressors having inverter technology, heat exchanger, dc inverter fan motor low noise hot gas by pass arrangement in order to prevent the flow of liquid gas in to the compressor, oil separator at the discharge side of the compressor, oil pump at the bottom of the compressor motor in order to keep the motor at low temperature even during part load condition. Outdoor shall be provided with necessary electrical control panel, fault detection system refrigerant of R410A etc., all complete as required.

The indoor units shall be of cassette mounted type of suitable rated as specified in the BOQ and inter connected using necessary copper refrigerant line & required accessories.

4.2.2 DRAWINGS.

- 4.2.2.1 The contractor / vendor shall visit the site and discuss with the Engineer-in-charge for any other details that he may need before submitting the offer with drawings.
- 4.2.2.2 All the measurable quantities of items will be measured as per the actuals at the time of execution as per the site requirement.
- 4.2.2.3 The above air-conditioners has to be supply, installation, testing & commissioning (SITC) by single firm only since all the items are integrated each other.
- 4.2.2.4 The purchase order will be placed based on the total value of the offer received from the firms.
- 4.2.2.5 Lowest bidder will be arrived on final landing cost (Basic price + Tax)
- 4.2.2.6 The Proposed installation of AC's indoor is at Ground Floor and outdoor units ground floor.

4.2.3 Scope of Supply

Name of the work: SITC of 22 HP VRF system Air Conditioning system with associated equipment at FMCD 1st floor Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

Sr. No	Description of Work	Unit	Qty	Rate (INR)	Amount (INR)
	Part A				
1.0	<u>VRF Outdoor Units :</u>				
	Super Modular Multi type TOP DISCHARGE VRF outdoor units equipped with highly efficient DC twin rotary / Inverter Scroll compressors with all inverter type compressor (s), special acryl precoated body, auto address setting, with multiple outdoor units and the COP up to 5.64 at 50% load , of capacities and quantities as mentioned below of make BLUE STAR / DIAKIN / TOSHIBA / LG / PANASONIC / MITSUBISHI.				
b	22 HP with minimum 2 or more compressors	No	1		
2.0	<u>INDOOR UNITS:</u>				
2.1	<u>4 WAY COMPACT CASSETTE UNIT</u>				
	Supply of 4 way compact cassette type indoor units complete with panels, turbo fan, cooling coil with suitable rows, electronic expansion valves, airfilter, in-bulit drain pump & insulated drain pan all as per standard				
a	1.6 Tr - 494 CFM or equivalent	Nos	11		
3.0	<u>CONTROLLERS</u>				
	Supply of Corded / cord less remote controllers for cassette standing cabinet and 4 way compact cassette units.	Nos	11		
TOTAL for Part A					

Sr. No	Description of Work	Unit	Qty	Rate (INR)	Amount (INR)
	Part B				
1.0	<u>VRF Outdoor Units :</u>				
	Installation , Testing and Commissioning of Super Modular Multi type TOP DISCHARGE VRF outdoor units equipped with highly efficient DC twin rotary / Inverter Scroll compressors with all inverter type compressor (s), special acryl precoated body, auto address setting, with multiple outdoor units and the COP up to 5.64 at 50% load , of capacities and quantities as mentioned below.				
b	22 HP with minimum 2 or more compressors	No	1		
2.0	<u>INDOOR UNITS:</u>				
	-				
2.1	<u>4 WAY COMPACT CASSETTE UNIT</u>				
	Installation , Testing and commissioning of 4 way compact cassette type indoor units complete with panels, turbo fan, cooling coil with suitable rows, electronic expansion valves, airfilter, in-bulit drain pump & insulated drain pan all as per standard				
a	1.6 Tr - 494 CFM or equivalent	Nos	11		
3.0	<u>CONTROLLERS</u>				
	Installation , Testing and Commissioning of Corded remote controllers for floor standing cabinet	Nos	11		
4.0	Supply & installation of Refrigerant copper piping insulated with the specified thickness of closed cell elastomeric nitrile rubber insulation in a tubular form and joints sealed with black cotton tape All refrigerant piping between indoor & outdoor units duly insulated and covered with Al. foil as per specifications. All piping inside the room shall be properly supported with hanger and exposed piping shall be properly supported in cable tray. All piping shall be pressure tested for 1.5 times the working pressure.				
a)	28.6 mm dia with 19 mm thick insulation	RMT	35		
b)	26 mm dia with 19 mm thick insulation	RMT	25		
c)	22.2 mm dia with 13 mm thick insulation	RMT	35		
d)	19.1 mm dia with 13 mm thick insulation	RMT	45		
e)	15.9 mm dia with 13 mm thick insulation	RMT	65		
f)	12.7 mm dia with 13 mm thick insulation	RMT	80		
g)	9.5 mm dia with 13 mm thick insulation	RMT	40		
h)	6.4 mm dia with 13 mm thick insulation	RMT	60		
	Any other size depending upon particular make and model (Rate only)				
l)		RO			
j)		RO			
k)		RO			
6.0	Supply & installation of Imported Refnet joints for each indoor unit connectivity	Nos	12		

Sr.No	Description of Work	Unit	Qty	Rate (INR)	Amount (INR)
7.0	Supply & installation of control cables between indoor and outdoor unit laid in PVC conduct and clamped as per OEM recommendations	RMT	281		
9.0	Supply & installation of remote control cabling between indoor and remote as per OEM recommendations	RMT	55		
10.0	Supply & installation of CPVC drain piping with 6 mm thk nitrile rubber insulation				
	40 mm dia	RMT	25		
	32 mm dia	RMT	45		
	25 mm dia	RMT	60		
11.0	Shifting and positioning of all IDU & ODU	Lot	1		
12.0	Installation Charges for all the Units including Pr. Testing, Vacuumising and Commissioning with Refrigerant Gas & Necessary angle frames for the outdoor units.	Lot	1		
13.0	Cable Trays 300 mm wide	RM	30		
14.0	Core cutting of size : 100/150mm Dia x 225mm Length in brick masanory	Nos	4		
TOTAL for Part B					
Summary					
				Total Part A	
				Total Part B	
				Grand Total	

4.2.4 Inspection & Tests

4.2.4.1 General

- 4.2.4.1.1** The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here. The Supplier shall at its own expense and at no cost to the NAL carry out all such tests and/or inspections of the Goods and Related Services as are specified in the chapter 4 or as discussed and agreed to during the course of finalization of contract.
- 4.2.4.1.2** The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the NAL
- 4.2.4.1.3** Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 4.2.4.1.4** The NAL or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the NAL and what inspections and tests the NAL requires and where they are to be conducted. The NAL shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes.
- 4.2.4.1.5** Should any inspected or tested Goods fail to conform to the specifications, the purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 4.2.4.1.6** The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 4.2.4.1.7** The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 4.2.4.1.8** With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their Principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
- 4.2.4.1.9** Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- 4.2.4.1.10** The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract.
- 4.2.4.1.11** Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.
- 4.2.4.1.12** On successful completion of acceptability test, receipt of deliverables, etc and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment. Acceptance certificate form as given in Annexure-I (Chapter 8) should be signed by authorised representative of Supplier & Purchaser.

4.2.4.1.13 Installation demonstration is to be arranged by the supplier and the same is to be done within 15 days of the arrival of the equipment at site.

4.2.5 Manufacturer's Inspection Certificate

After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such Pre- dispatch inspection and testing.

4.2.6 Installation, Commissioning & Acceptance Tests

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

In the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

4.2.7 Time for completion of the work: 3 months from the date of purchase order.

4.2.8 Training.

1)	Location	CSIR-NAL, HAL airport road, Kodihalli
2)	Number of persons	4 person
3)	Period of Training	2 days
4)	Nature of Training	Operation, maintenance & trouble shooting

CHAPTER 4

SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

4.3 Detailed Specification (Package – 3).

Supply, installation, testing and commissioning of 18 HP VRF system Air Conditioning system with associated equipment at Failure Analysis lab of Materials Science Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

4.3.1 SYSTEM

SCOPE OF WORK: Supply, installation, testing and commissioning of 18 HP VRF system Air Conditioning system with associated equipment at Failure Analysis lab of Materials Science Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

Supply, installation, testing and commissioning of factory built Air cooled Variable Refrigerant Flow (VRF) system with INVERTOR COMPRESSOR. The outdoor unit shall be designed to work on Variable refrigerant circulation depending on actual load sensing. The unit shall be consisting with inverter compressors whose capacity is variable in each outdoor model. The variable capacity compressor shall be of inverter control as per manufacturer design to meet the total capacity. The condenser coil and condenser fans shall be sized to work even at 52 °C ambient without tripping. The condenser fins shall be coated with anti-corrosive material for long life. The unit shall be of oil arrester to prevent oil migration. Suction accumulator and liquid receiver shall be provided to balance variable refrigerant circulation. The unit shall also meet CPCB norms on noise and air pollution levels as per applicable standards. The system shall operate with only two pipes i.e., suction and liquid line that can be connected to multiple indoor units. The necessary microprocessor based control system shall maintain the communication between indoor and outdoor units to operate the compressor in most efficient way and to keep the equal running time for constant speed compressors. The unit shall work with R-410A refrigerant gas 415 V 3 phase 50Hz AC supply.

OUT DOOR UNITS & INDOOR UNITS:

Outdoor unit (ODU) capacity shall be of 18 HP cooling capacity in combination of not more than 1 unit and suitable electrical & refrigerant interconnection with necessary control cable & refrigerant suction / liquid line tapping, initial charge of Refrigerant R 410A etc., all complete and ready for use., as required. The outdoor units shall be modular type equipped with highly efficient optimized scroll compressors having inverter technology, heat exchanger, dc inverter fan motor low noise hot gas by pass arrangement in order to prevent the flow of liquid gas in to the compressor, oil separator at the discharge side of the compressor, oil pump at the bottom of the compressor motor in order to keep the motor at low temperature even during part load condition. Outdoor shall be provided with necessary electrical control panel, fault detection system refrigerant of R410A etc., all complete as required.

The indoor units shall be of Hi-wall & floor mounted type of suitable rated as specified in the BOQ and inter connected using necessary copper refrigerant line & required accessories.

4.3.2 DRAWINGS.

- 4.3.2.1 The contractor / vendor shall visit the site and discuss with the Engineer-in-charge for any other details that he may need before submitting the offer with drawings.
- 4.3.2.2 All the measurable quantities of items will be measured as per the actuals at the time of execution as per the site requirement.
- 4.3.2.3 The above air-conditioners has to be supply, installation, testing & commissioning (SITC) by single firm only since all the items are integrated each other.
- 4.3.2.4 The purchase order will be placed based on the total value of the offer received from the firms.
- 4.3.2.5 Lowest bidder will be arrived on final landing cost (Basic price + Tax)
- 4.3.2.6 The Proposed installation of AC's indoor is at Ground Floor and outdoor units ground floor.

4.3.3 Scope of Supply

Name of the work: SITC of 18 HP VRF system Air Conditioning system with associated equipment at Failure Analysis lab of Materials Science Division, Kodihalli, CSIR-National Aerospace Laboratories, Bengaluru – 560017.

Sr. No	Description of Work	Unit	Qty	Rate (INR)	Amount (INR)
Part A					
1.0	<u>VRF Outdoor Units :</u>				
	Super Modular Multi type TOP DISCHARGE VRF outdoor units equipped with highly efficient DC twin rotary / Inverter Scroll compressors with all inverter type compressor (s), special acryl precoated body, auto address setting, with multiple outdoor units and the COP up to 5.64 at 50% load, of capacities and quantities as mentioned below of make: BLUE STAR / DIAKIN / TOSHIBA / LG / PANASONIC / MITSUBISHI.				
a	18 HP with minimum 2 or more Compressors	Nos	1		
2.0	<u>INDOOR UNITS:</u>				
2.1	<u>FLOOR STANDING CABINET UNIT</u>				
	Supply of floor standing cabinet type indoor units complete with centrifugal fan, cooling coil with suitable rows, electronic expansion valves, airfilter & insulated drain pan all as per standard				
a	2 Tr - 635 CFM or equivalent	Nos	5		
2.2	<u>HI-WALL UNIT</u>				
	Supply of Hi-wall type indoor units complete with cross flow fan, cooling coil with suitable rows, electronic expansion valves, airfilter, & insulated drain pan all as per standard. All indoor units should have Cordless remote controllers				
a	1.6 Tr - 494 CFM or equivalent	No	3		
3.0	<u>CONTROLLERS</u>				
a	Supply of Corded remote controllers for floor standing cabinet.	Nos	5		
TOTAL for Part A					

Sr. No	Description of Work	Unit	Qty	Rate (INR)	Amount (INR)
	Part B				
1.0	<u>VRF Outdoor Units :</u>				
	Installation, Testing and Commissioning of Super Modular Multi type TOP DISCHARGE VRF outdoor units equipped with highly efficient DC twin rotary / Inverter Scroll compressors with all inverter type compressor (s), special acryl pre coated body, auto address setting, with multiple outdoor units and the COP up to 5.64 at 50% load, of capacities and quantities as mentioned below.				
a	18 HP with minimum 2 or more Compressors	Nos	1		
2.0	<u>INDOOR UNITS:</u>				
	—				
2.1	<u>FLOOR STANDING CABINET UNIT</u>				
	Installation , Testing and Commissioning floor standing cabinet type indoor units complete with centrifugal fan, cooling coil with suitable rows, electronic expansion valves, air filter & insulated drain pan all as per standard				
a	2 Tr - 635 CFM or equivalent	Nos	5		
	—				
2.2	<u>HI-WALL UNIT</u>				
	Installation, Testing and Commissioning of Hi-wall type indoor units complete with cross flow fan, cooling coil with suitable rows, electronic expansion valves, air filter, & insulated drain pan all as per standard. All indoor units should have Cordless remote controllers				
a	1.6 Tr - 494 CFM or equivalent	No	3		
3.0	<u>CONTROLLERS</u>				
a	Installation , Testing Commissioning of Corded remote controllers for floor standing cabinet	Nos	5		
4.0	Supply & installation of Refrigerant copper piping insulated with the specified thickness of closed cell elastomeric nitrile rubber insulation in a tubular form and joints sealed with black cotton tape. All refrigerant piping between indoor & outdoor units duly insulated and covered with Al. foil as per specifications. All piping inside the room shall be properly supported with hanger and exposed piping shall be properly supported in cable tray. All piping shall be pressure tested for 1.5 times the working pressure.				
a)	28.6 mm dia with 19 mm thick insulation	RMT	35		
b)	22.2 mm dia with 13 mm thick insulation	RMT	25		
c)	19.1 mm dia with 13 mm thick insulation	RMT	35		
d)	15.9 mm dia with 13 mm thick insulation	RMT	60		
e)	12.7 mm dia with 13 mm thick insulation	RMT	60		
f)	9.5 mm dia with 13 mm thick insulation	RMT	35		
g)	6.4 mm dia with 13 mm thick insulation	RMT	45		
	Any other size depending upon particular make and model (Rate only)				
h)		RO			

i)		RO			
j)		RO			
Sl.No	Description of Work	Unit	Qty	Rate (INR)	Amount (INR)
5.0	Supply & installation of Imported Refnet joints for each indoor unit connectivity				
6.0	Supply & installation of control cables between indoor and outdoor unit laid in PVC conduct and clamped as per OEM recommendations	RMT	190		
7.0	Supply & installation of remote control cabling between indoor and remote as per OEM recommendations	RMT	40		
8.0	Supply & installation of CPVC drain piping with 6 mm thk nitrile rubber insulation				
	40 mm dia	RMT	20		
	32 mm dia	RMT	30		
	25 mm dia	RMT	60		
9.0	Installation Charges for all the Units including Pr.Testing, Vacuumising and Commissioning with Refrigerant Gas & Necessary angle frames for the outdoor units.	Lot	1		
10.0	Shifting and Positioning of all IDU and ODU	Lot	1		
11.0	Cable Trays 300 mm wide	RM	20		
12.0	Core cutting of size : 100mm Dia x 300mm Length in stone masanory	Nos	6		
TOTAL Part B					

Summary	
Total Part A	
Total Part B	
Grand Total	

4.3.4 Inspection & Tests

4.3.4.1 General

- 4.3.4.1.1** The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here. The Supplier shall at its own expense and at no cost to the NAL carry out all such tests and/or inspections of the Goods and Related Services as are specified in the chapter 4 or as discussed and agreed to during the course of finalization of contract.
- 4.3.4.1.2** The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the NAL
- 4.3.4.1.3** Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 4.3.4.1.4** The NAL or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the NAL and what inspections and tests the NAL requires and where they are to be conducted. The NAL shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes.
- 4.3.4.1.5** Should any inspected or tested Goods fail to conform to the specifications, the purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 4.3.4.1.6** The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 4.3.4.1.7** The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 4.3.4.1.8** With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their Principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
- 4.3.4.1.9** Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- 4.3.4.1.10** The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract.
- 4.3.4.1.11** Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.
- 4.3.4.1.12** On successful completion of acceptability test, receipt of deliverables, etc and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall

be deemed to be the date of successful commissioning of the equipment. Acceptance certificate form as given in Annexure-I (Chapter 8) should be signed by authorised representative of Supplier & Purchaser.

4.3.4.1.13 Installation demonstration is to be arranged by the supplier and the same is to be done within 15 days of the arrival of the equipment at site.

4.3.5 Manufacturer's Inspection Certificate

After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such Pre- dispatch inspection and testing.

4.3.6 Installation, Commissioning & Acceptance Tests

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

In the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

4.3.7 Time for completion of the work: 3 months from the date of purchase order.

4.3.8 Training.

1)	Location	CSIR-NAL, HAL airport road, Kodihalli
2)	Number of persons	4 person
3)	Period of Training	2 days
4)	Nature of Training	Operation, maintenance & trouble shooting

CHAPTER 5

Eligibility & Qualification Requirements

5.1 Eligibility Criteria

a) **Legal Valid Entity:**

The Bidder shall necessarily be a legally valid entity either in the form of a Limited Company or a Private Limited Company registered under the Indian Companies Act, 1956 or Country of Origin.

Bidder in the form of consortium and Partnership is not permitted.

Copy of Certificate of Incorporation issued by Registrar of firms/companies is to be submitted in support of this criterion.

b) Indian Agent quoting on behalf of Foreign Principal supplier should submit a certified **copy of an Agreement/Memorandum of understanding (MOU)** between both the parties.

c) The bidder shall furnish documentary evidence to demonstrate that the bidder satisfies the bidders' **eligibility criteria**, as mentioned in **ITB Clause 1.1.2** in the form as per **Annexure-K of Chapter- 8**.

d) An **undertaking (self-certificate)** is to be submitted that the Organization has not been blacklisted during last 3 years by any Central / State Government Department/Organization in the form as per **Annexure-L of Chapter- 8**.

5.2 Technical Qualification Criteria

a) The Bidder should be a manufacturer /authorized representative of a manufacturer who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the "Technical Specification". Authorised representative / Indian Agent to submit the **Manufacturers' Authorization Form Chapter-8: Annexure B** with the technical bid.

b) Equipment / System offered must be of the most recent series/models incorporating the latest improvements in design. The models should be in successful operation for at least one year as on date of Bid Opening. The bidder (OEM/Direct Distributor/Dealer) should have supplied and installed during **past 2 years, at least two similar equipment / systems** as mentioned in Chapter-4.

The Bidder should furnish the information on all past supplies and satisfactory performance during past 3 years in the **Performance Statement Form** (Chapter-8, Annexure D). Bidders shall invariably furnish documentary evidence (Client's certificate) in support of the **satisfactory operation of the equipment / system**.

c) Details of Service Centres and information on service support facilities that would be provided after the warranty period (in the **Service Support Form-Chapter-8 Annexure-F**).

d) Foreign bidder/suppliers quoting directly, should submit a letter of Authorisation in favour of Indian Agent/Representative indicating complete address, contact person and validity of Authorization if any along with their technical bid. Foreign bidder/suppliers quoting directly should ensure that adequate and specialized expertise is already available **or** will be made available following the execution of the contract in the Purchaser's country, to ensure that **the support services are responsive and adequate** as per **ITB 1.13.2(c)**.

5.3 Financial Qualification Criteria

a) The Bidders are requested to submit **Audited Balance Sheet** for the **last three financial year** alongwith Technical Bid.

5.4 Either the Indian Agent on behalf of the foreign principal or the foreign principal directly could bid in a tender **but not both**. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. Further, to maintain sanctity of tendering system **one Indian agent cannot represent two different foreign principals in one tender**.

CHAPTER - 6A

PRICE SCHEDULE FOR GOODS BEING OFFER FROM ABROAD

(BIDDER SHOULD QUOTE IN THIS FORMAT)

Tender No.:						
Quotation No.					Date:	
Quotation Valid upto						
Country of Origin					Currency	
Sr. No.	Description of Item	HSS Code	Unit	Quantity	Rate	Amount
Package - 1						
1	Supply, Installation, Testing and Commissioning of 32 HP VRF/VRV Air Conditioning System along with associated equipment.					
2	Required Spares/Consumables (if any)					
3	Accessories (if any)					
4	Additional items					
Package - 2						
1	Supply, Installation, Testing and Commissioning of 22 HP VRF System including outdoor/Indoor units.					
2	Required Spares/Consumables (if any)					
3	Accessories (if any)					
4	Additional items					
Package - 3						
1	Supply, Installation, Testing and Commissioning of 18 HP VRF System including outdoor/Indoor units.					
2	Required Spares/Consumables (if any)					
3	Accessories (if any)					
4	Additional items					
					Sub-Total: Ex-Works Price	
					Less: Discount% (if any)	
					Sub-Total : Net Ex-Works Price	
					Add: Packing & Forwarding Charges (if any)	
					Add: Inland Freight Charges	
					Sub-Total: INCOTERM: FCA/FOB International Airport,Country	
					Add: Freight upto Bengaluru Airport	
					Add: Insurance Charges (from Warehouse to Warehouse) (if any)	
					Total (A):	
OTHER CHARGES						
5	Installation & Commissioning Charges (if any)					
6	Training (if any)					
					Sub-Total : Before Tax	
					Add: GST on Sr. No.5 & 6 (if applicable)	
7	Bank Charges (if any)					
					Total (B):	
					Grand Total (A+B): CIP/CIF Charges - Bengaluru Price	
For SI. No.5 & 6 - TDS will be deducted at actuals.						

OTHER TERMS		
Sr. No.	Approximate weight of the Consignment	Approximate dimensions of the consignment
1		
2	Mode of Shipment	
3	Port of Destination	Final Destination
4	Delivery Term (INCO Term)	
5	Delivery Schedule including Item, Installation, Commissioning, Training & Acceptance	
6	Payment Term	
7	Warranty	
NOTE:	Agency Commission, if any would be payable only in Indian Rupee as per the Exchange Rate mentioned in the Bill of Entry.	

PRICE SCHEDULE FOR GOODS BEING OFFER FROM INDIA
(BIDDER SHOULD QUOTE IN THIS FORMAT)

Tender No.:						
Quotation No.				Date:		
Quotation Valid upto						
Country of Origin				Currency		
Sr. No.	Description of Item	Code	Unit	Quantity	Rate	Amount
Package - 1						
1	Supply, Installation, Testing and Commissioning of 32 HP VRF/VRV Air Conditioning System along with associated equipment.					
2	Required Spares/Consumables (if any)					
3	Accessories (if any)					
4	Additional items					
Package - 2						
1	Supply, Installation, Testing and Commissioning of 22 HP VRF System including outdoor/Indoor units.					
2	Required Spares/Consumables (if any)					
3	Accessories (if any)					
4	Additional items					
Package - 3						
1	Supply, Installation, Testing and Commissioning of 18 HP VRF System including outdoor/Indoor units.					
2	Required Spares/Consumables (if any)					
3	Accessories (if any)					
4	Additional items					
Sub-Total: Ex-Works Price						
Less: Discount% (if any)						
Sub-Total : Net Ex-Works Price						
Add: Packing & Forwarding Charges (if any)						
Add: Transportation Charges (if any)						
Sub-Total : Before Tax						
Add: GST / IGST (against Concessional Certificate)						
Total (A):						
OTHER CHARGES						
5	Installation & Commissioning Charges (if any)					
6	Training (if any)					
Sub-Total : Before Tax						
Add: GST on Sr. No.5 & 6 (if applicable)						
7	Bank Charges (if any)					
Total (B):						
Grand Total (A+B): F.O.R CSIR-NAL						

For Sl. No.5 & 6 - TDS will be deducted at actuals.		
8	Annual Maintenance Contract / Charges	
	Comprehensive	Non-Comprehensive
Grand Total in Figures		
Grand Total in Words		
OTHER TERMS		
Sr. No.	Approximate weight of the Consignment	Approximate dimensions of the consignment
1		
2	Mode of Shipment	
3	Port of Destination	Final Destination
4	Delivery Term	
5	Delivery Schedule including Item,	
6	Payment Term	
7	Warranty	

CHAPTER 7

Contract Form

Contract No. _____ Date: _____

THIS CONTRACT AGREEMENT is made
the [*insert: number*] day of [*insert: month*], [*insert: year*].

BETWEEN

- (1) The Council of Scientific & Industrial Research registered under the Societies Registration Act 1860 of the Government of India having its registered office at 2, Rafi Marg, New Delhi-110001, India represented by National Aerospace Laboratories, Bengaluru (hereinafter called “the Purchaser”), and
- (2) [*insert name of Supplier*], a corporation incorporated under the laws of [*insert: country of Supplier*] and having its principal place of business at [*insert: address of Supplier*] (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [*insert brief description of Goods and Services*] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [*insert Contract Price in words and figures, expressed in the Contract currency(ies)*] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

01. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
02. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract:

(a)	This Contract Agreement
(b)	General Conditions of Contract
(c)	Special Conditions of Contract
(d)	Technical Requirements (including Schedule of Requirements and Technical Specifications)
(e)	The Supplier's Bid and original Price Schedules
(f)	The Purchaser's Notification of Award
(g)	[<i>Add here any other document(s)</i>]

03. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.
04. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
05. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Union of India on the day, month and year indicated above.

For and on behalf of the Council of Scientific & Industrial Research

Signed : [*insert signature*]
in the capacity of [*insert title or other appropriate designation*]
in the presence of [*insert identification of official witness*]

Signed : [*insert signature*]
in the capacity of [*insert title or other appropriate designation*]
in the presence of [*insert identification of official witness*]

For and on behalf of the Supplier

Signed : [*insert signature of authorized representative(s) of the Supplier*]
in the capacity of [*insert title or other appropriate designation*]
in the presence of [*insert identification of official witness*]

CHAPTER 8

OTHER STANDARD FORMS

Sr. No.	Name of the Form	Annexure
1	Bidder Information Form	A
2	Manufacturers' Authorization Form	B
3	Bid Security Form / Earnest Money Deposit	C
4	Performance Statement Form	D
5	Deviation Statement Form	E
6	Service Support Detail Form	F
7	Bid Form	G
8	Performance Security Form	H
9	Acceptance Certificate Form	I
10	Indemnity Bond	J
11	Eligibility Certificate	K
12	Non Black List Certificate	L

NOTE: The Successful Bidder shall submit Documents with reference to Annexure – H, I & J after Award of Contract as mentioned in Purchase Order.

Bidder Information Form

- (a) [The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted. This should be done of the letter head of the firm]

Date : [insert date (as day, month and year) of Bid Submission]

Tender No : [insert number from Invitation for bids]

01.	Bidder's Legal Name [insert Bidder's legal name]
02.	In case of JV, legal name of each party: [insert legal name of each party in JV]
03.	Bidder's actual or intended Country of Registration: [insert actual or intended Country of Registration]
04.	Bidder's Year of Registration: [insert Bidder's year of registration]
05.	Bidder's Legal Address in Country of Registration: [insert Bidder's legal address in country of registration]
06.	<p>Bidder's Authorized Representative Information</p> <p>Name: [insert Authorized Representative's name]</p> <p>Address: [insert Authorized Representative's Address]</p> <p>Telephone/Fax numbers: [insert Authorized Representative's telephone/fax numbers]</p> <p>Email Address: [insert Authorized Representative's email address]</p>
07.	<p>Attached are copies of original documents of:</p> <p>Articles of Incorporation or Registration of firm named in 1, above.</p>

Signature of Bidder _____

Name _____

Business Address _____

MANUFACTURERS' AUTHORIZATION FORM

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer.]

Date : *[insert date (as day, month and year) of Bid Submission]*

Tender No. : *[insert number from Invitation For Bids]*

To : *[insert complete name and address of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 2.20 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of: *[insert complete name of Bidder]*

Dated on _____ day of _____, _____ *[insert date of signing]*

BID SECURITY FORM

Whereas _____
(hereinafter called the tenderer)

has submitted their offer dated _____
for the supply of _____
(hereinafter called the tender)

Against the Purchaser's Tender No. _____
KNOW ALL MEN by these presents that WE _____
of _____ having our registered office at _____
_____ are bound unto _____ (hereinafter called the "Purchaser")

In the sum of _____

For which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS OF THIS OBLIGATION ARE:

(1)	If the tenderer withdraws or amends or modifies or impairs or derogates from the Tender in any respect within the period of validity of this tender.
(2)	If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity
(3)	If the tenderer fails to furnish the Performance Security for the due Performance of the contract.
(4)	Fails or refuses to accept/execute the contract.

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the authorized officer of the Bank)

Name and designation of the officer
Seal, name & address of the Bank and address of the Branch

Note: Whenever the bidder chooses to submit the Bid Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

PERFORMANCE STATEMENT FORM

Details of similar equipment / systems supplied & installed during past 3 years in India & Abroad

Name of the Firm _____

Order Placed by (full address of Purchaser)	Order No. and date	Description and quantity of ordered equipment	Value of order	Date of completion of deliver as per contract	Date of actual completion of delivery	Remarks indicating reasons for late delivery, if any	Has the equipment been installed/ working satisfactory? (Attach a certificate from the purchaser / Consignee)	Name of Contact person along with Telephone No., Fax No. and e-mail address

Signature and Seal of the manufacturer/Bidder

Place :

Date :

DEVIATION STATEMENT FORM

PART -I

The following are the particulars of deviations from the requirements of the tender specifications:

CLAUSE	DEVIATION	REMARKS (INCLUDING JUSTIFICATION)

Place:

Date:

Signature and seal of the
Manufacturer/Bidder

NOTE:

Where there is no deviation, the statement should be returned duly signed with an endorsement indicating "No Deviations".

PART – II
(Refer Clause 1.25 of Tender Document)

Sr. No.	TENDER REQUIREMENT	COMPLIANCE	Document Submitted
1	Bid is Signed	Yes / No	Yes / NA
3	Bid Validity (90 days after the date of Bid opening)	Yes / No Bid valid up to	Yes / NA
4	Warranty: Two-year warranty from Installation & Commissioning and date of acceptance	Yes / No	Yes / NA
5	Agree to submit Performance Security 10% of PO Value as per Clause 2.12.1 & as specified in SCC	Yes / No	Yes / NA
6	Original Equipment Manufacturer/Authorised Indian Agent agree to submit Contract Agreement in the form as per Chapter-7 (For procurement above Rs.25 Lakh)	Yes / No	Yes / NA
7	Original Equipment Manufacturer/Authorised Indian Agent agree to submit Indemnity Bond as per Chapter-8 & Annexure-J (For procurement above Rs.25 Lakh)	Yes / No	Yes / NA

The Bidder should submit other documents such as fulfillment of financial qualification criteria, Schedule of Requirement (Chapter-3) and various forms as specified in Chapter-8.

SERVICE SUPPORT DETAIL FORM

Sr. No.	List of similar type of equipments serviced in the past 3 years	Address, Telephone Nos., Fax No. and e-mail address of the buyer	Nature of training Imparted/ service provided	Name and address of service provider

Signature and Seal of the manufacturer/Bidder.....

Place :

Date :

Bid Form

[The Bidder shall fill in this Form in accordance with the instructions indicated No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date : [insert date (as day, month and year) of Bid Submission]

Tender No. :

To : Director, CSIR-NAL, Bengaluru

We, the undersigned, declare that:

(a)	We have examined and have no reservations to the Bidding Documents, including Addenda No.: [insert the number and issuing date of each Addenda]
(b)	We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods and Related Services [insert a brief description of the Goods and Related Services] as specified in Chapter 4
(c)	The total price of our Bid, excluding any discounts offered in item (d) below, is: [insert the total bid price in words and figures, indicating the various amounts and the respective currencies]
(d)	The discounts offered and the methodologies for their application are: Discounts. If our bid is accepted, the following discounts shall apply. [Specify in detail each discount offered and the specific item of the Schedule of Requirements to which it applies.]
(e)	Our bid shall be valid for the period of time specified in ITB Clause 1.16, from the date fixed for the bid submission due date in accordance with ITB Clause 1.19 and it shall remain binding upon us and may be accepted at any time before the expiration of that period
(f)	If our bid is accepted, we commit to obtain a performance security in accordance with ITB Clause 1.41 and GCC Clause 2.12 for the due performance of the Contract
(g)	The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract: [insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]

Name of Recipient	Address	Reason	Amount
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(If none has been paid or is to be paid, indicate "none.")

(h)	We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
(i)	We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Signed : [insert signature of person whose name and capacity are shown]

In the capacity of [insert legal capacity of person signing the Bid Submission Form]

Name : [insert complete name of person signing the Bid Submission Form]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____, _____ [insert date of signing]

PERFORMANCE SECURITY FORM

MODEL BANK GUARANTEE FORMAT FOR PERFORMANCE SECURITY

To,

.....

WHEREAS

(name and address of the supplier) (hereinafter called “the supplier”) has undertaken, in pursuance of contract no. datedto supply (description of goods and services) (herein after 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 scheduled commercial bank recognized by you 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), 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 day of, 20.....

(Signature of the authorized officer of the Bank)

.....
Name and designation of the officer

.....
Seal, name & address of the Bank and address of the Branch

Note: Whenever, the bidder chooses to submit the Performance Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

Acceptance certificate form

No.

Dated:

M/s.

Sub: Certificate of commissioning of equipment

- 01.** This is to certify that the equipment as detailed below has/have been received in good condition along with all the standard and special accessories (subject to remarks in Para 2). The same has been installed and commissioned.

(a)	Contract No. Date:	
(b)	Description of the equipment	
(c)	Name of the consignee	
(d)	Scheduled date of delivery of the consignment to the Laboratory / Institutes	
(e)	Actual date of receipt of consignment by the Laboratory / Institutes	
(f)	Scheduled date for completion of installation/commissioning	
(g)	Actual date of completion of installation/commissioning	
(h)	Penalty for late delivery (at Laboratory / Institutes level) Rs.	
(i)	Penalty for late installation (at Laboratory / Institutes level) Rs.	

- 02** Details of accessories/items not yet supplied and recoveries to be made on that account:

Sr. No.	Description	Amount to be recovered

- 03** The acceptance test has been done to our entire satisfaction. The supplier has fulfilled his contractual obligations satisfactorily

OR

The supplier has **failed to fulfil** his contractual obligations with regard to the following:

Sr. No.	Failure	Amount to be recovered
(a)		
(b)		
(c)		

The amount of recovery on account of failure of the supplier to meet his contractual obligations is as indicated at para 03.

For Supplier

Signature

Name

Designation

Name of the firm

Date

For Purchaser

Signature

Name

Designation

Name of the Laboratory / Institute

Date

INDEMNITY BOND

No. _____

Date:_____

1) Amalgamation/Acquisition

In the event of M/s. _____proposes for amalgamation, acquisition or sale of its business to any other firm during this contract period, M/s._____ and proposed Buyer/Successor of the Principal Company are liable to execute, fulfill contractual obligations without any deviations. For this purpose M/s. _____/M/s._____ and proposed Buyer/Successor of the Principal Company shall indemnify itself to the Director, National Aerospace Laboratories, Bengaluru to fulfill the contractual obligations as per the terms of the CSIR-NAL Global Tender and quotation of M/s. _____No. _____ dated_____ and National Aerospace Laboratories P.O. No._____dated _____. The contractual obligations are supply, installation, commissioning, warranty maintenance/replacement of spares, accessories etc. as per the above mentioned Purchase Order.

2) JointVenture, Consortium or Association

If the Supplier is a joint venture, consortium, or association, all the parties shall be jointly and severally liable to the CSIR-NAL for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the CSIR-NAL.

3) Patent Indemnity

The Supplier shall, subject to CSIR-NAL's compliance and indemnify and hold CSIR-NAL and its employees and officers harmless from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which CSIR-NAL may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of: (a) the installation of the Goods by the Supplier or the use of the Goods in India; and (b) the sale in any country of the products produced by the Goods.

For M/s. _____
Principal Supplier.

For M/s _____
Indian Agent.

Eligibility Certificate

This is to certify that we are not associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids / Tender No. _____ dated _____.

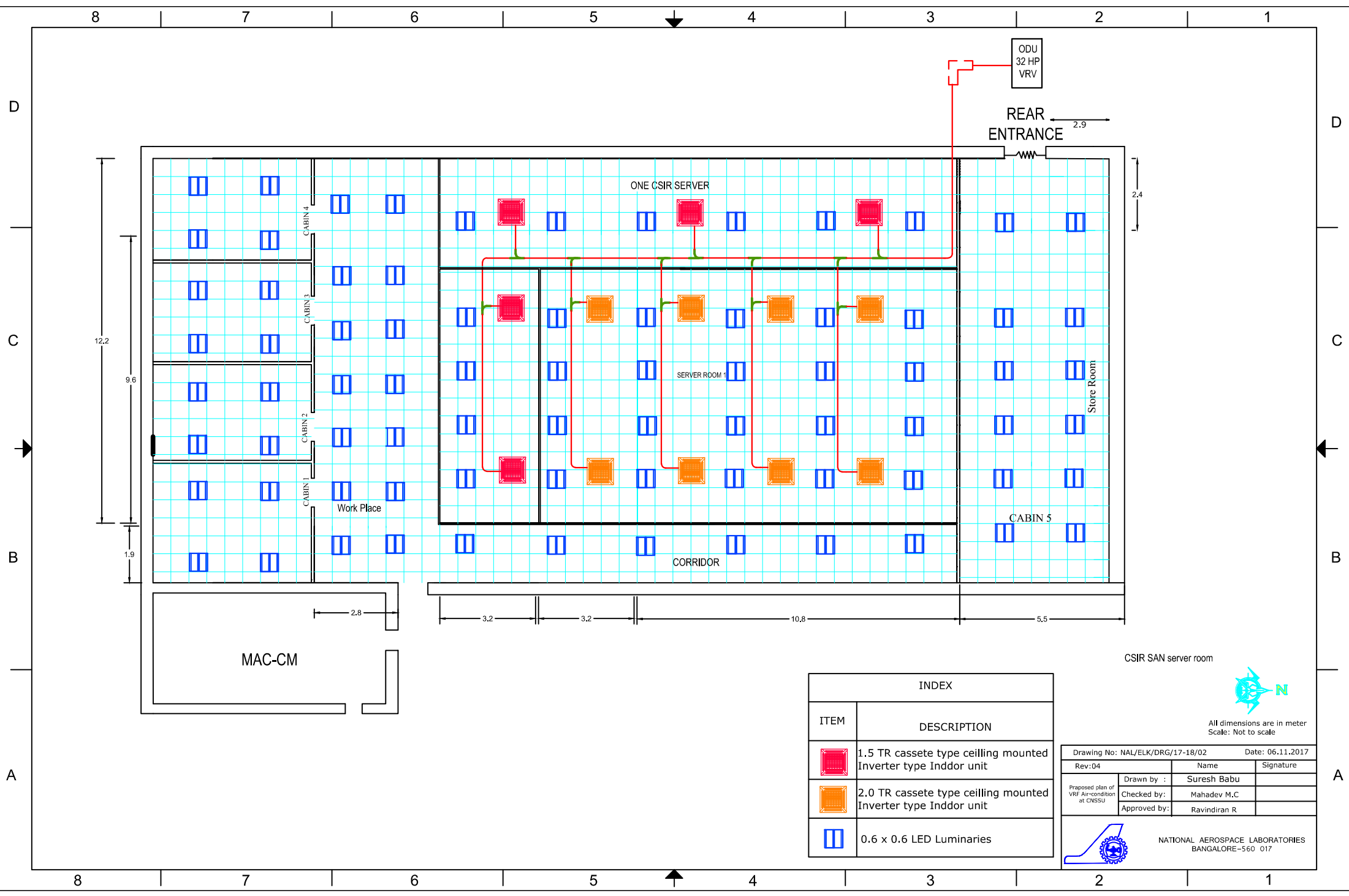
Authorised Signatory

Name: _____

Designation: _____

Non-Black listing Self Certificate




This is to certify that M/s. _____ has not been blacklisted by any Central / State Government Department / organization in last 3 years.




CSIR SAN server room



All dimensions are in meter
Scale: Not to scale

INDEX	
ITEM	DESCRIPTION
	1.5 TR cassette type ceiling mounted Inverter type Inddor unit
	2.0 TR cassette type ceiling mounted Inverter type Inddor unit
	0.6 x 0.6 LED Luminaries

Drawing No: NAL/ELK/DRG/17-18/02		Date: 06.11.2017	
Rev:04	Name	Signature	
Proposed plan of VRF Air-condition at CNSSU	Drawn by :	Suresh Babu	
	Checked by :	Mahadev M,C	
	Approved by :	Ravindiran R	


NATIONAL AEROSPACE LABORATORIES
 BANGALORE-560 017

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