



TENDER DOCUMENT

FOR

Procurement of

XML Based Automatic Data Switching System with Automated Pre-Flight Information Systems for Briefing, Consultation, Flight Planning and Flight Documentation (On Line Briefing System-OLBS) with integration and Commissioning at Aerodrome Meteorological Offices (AMOs) at four Airports- New Delhi, Kolkata, Chennai and Mumbai.

India

**India Meteorological Department
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New Delhi-110003, INDIA**

TABLE OF CONTENTS

S. No	Paragraph Heading	Page No.
I	Section I: Notice Inviting Tender(NIT)	7
II	Section II: Instructions to Bidders (ITB)	9
1	Introduction	9
2	Language of Tender	9
3	Eligible Goods and Services	9
4	Tendering Expense	9
5	Regular visit of website	9
6	Amendments to Tender Enquiry (TE) documents	9
7	Signing and uploading of Tender	10
8	Alteration and Withdrawal of Tender	10
9	Opening of Tender	10
10	Scrutiny and Evaluation of Bids	10
11	Packing and Marking	12
III	Section III: Appendix to Instructions to Bidders(AITB)	13
1	Pre-Bid Conference	13
2	Submission of Bids	13
IV	Section IV: Eligibility & Qualification criterion for Bidders	16
V	Section V: Schedule of Requirement	18
1	Background	18
2	Overview of Requirements	19
VI	Section VI: Technical specifications (including Drawings) and Quality Assurance (Inspections and Tests)	21
1	Hardware	21
2	Current weather Display System (METAR Display system)	31
3	GPS Hardware specification	33
4	Spare Parts	33
5	System and Application Software	33
6	Automated Pre-Flight Information Systems for Briefing, Consultation,	43

	Flight Planning and Flight Documentation	
7	Requirements for presentations and references	45
8	Factory Acceptance Testing(FAT)	45
9	Delivery terms, Schedule and Installation	46
10	Site Acceptance Test	46
11	Training	47
12	Documentation	48
13	Compliance/Non-compliance statement	48
14	Warranty	48
15	Comprehensive Annual Maintenance Contract (CAMC)	49
16	Service Window	49
17	Terms and Conditions	50
18	Payment Clause	51
19	Penalty Clauses during Warranty and CAMC	51
20	List of Deliverables	52
21	Pre-bid meeting	52
VII	Section VII: General Conditions of Contract (GCC)	53
1	General-I	53
2	General-II	53
3	Tender Validity	53
4	Purchaser's Right to accept any tender and to reject any or all bids	53
5	Tender Fee	53
6	Purchase/ Price preference	53
7	Earnest Money Deposit (EMD)	54
8	Performance Security	55
9	Terms of Delivery	55
10	Delivery Schedule	55
11	Force Majeure	56
12	Modification of Contract	56
13	Taxes and Duties in India	56

14	Fall Clause	57
15	Termination of tender by the Purchaser	57
16	Arbitration clause	58
VIII	Section VIII: Special Conditions of Contract (SCC)	59
1	Warranty	59
2	List of Deliverables	59
3	Comprehensive Annual Maintenance Contract (CAMC)	59
4	Penalty clause/Liquidated damages clause (LD) for delayed stores & Services	60
5	Award Criteria and Tolerance Clause	61
6	Terms and Mode of Payment	61
IX	Section IX: Standard Format	62
1	Annexure- I CHECKLIST	62
2	Annexure -II TENDER TERMS & CONDITIONS ACCEPTANCE FORM	64
3	Annexure- III MODEL BANK GUARANTEE FORMAT FOR FURNISHING EMD	65
4	Annexure- IV PRICE BID FORMAT(FOR ONE SITE)	66
5	Annexure- V PRE-CONTRACT INTEGRITY PACT	69
6	Annexure- VI BLOCK DIAGRAM OF THE PROPOSED SYSTEM	75
7	Annexure- VII COMPLIANCE STATEMENT TABLE	76
8	Annexure- VIII PROPOSED LIST OF DELIVERABLES(FOR ONE SITE)	83
9	Annexure- IX CHANGES TO WMO-No. 386 THE MANUAL ON THE GLOBAL TELECOMMUNICATIONS SYSTEMS(2015 EDITION) TO TAKE EFFECT FROM 1 NOVEMBER 2016	85

List of abbreviations in RFP

S.No.	Abbreviations	Explanation
1	NIT	Notice Inviting Tender
2	RFP	Request for Proposal
3	ITB	Instructions to Bidders
4	AITB	Appendix to Instructions to Bidders
5	IMD	India Meteorological Department
6	CPP	Central Public Procurement Portal
7	TE	Tender Enquiry
8	EMD	Earnest Money Deposit
9	DCS	Digital Signature Certificate
10	NIC	National Informatics Centre
11	OEM	Original Equipment Manufacturer
12	IGST	Integrated Goods and Service Tax
13	SGST	State Goods and Service Tax
14	CGST	Central Goods and Service Tax
15	CDEC	Custom Duty Exemption Certificate
16	CDMC	Comprehensive Annual Maintenance Contract
17	FOR	Freight on Road
18	FOB	Freight on Board
19	GCC	General Conditions of Contract
20	SCC	Special Conditions of Contract
21	OSC	Original Software Company
22	MoMSME	Ministry of Micro, Small & Medium Enterprises
23	BG	Bank Guarantee
24	DDO	Drawing and Disbursing Office
25	DGM	Director General of Meteorology
26	NSIC	National Small Industries Corporation
27	LD	Liquidated Damages clause
28	NOC	No Objection Certificate

29	CPU	Central Purchase Unit
30	TDS	Tax Deducted at Source
31	PAN	Permanent Account Number
32	DTAA	Double Taxation Avoidance Agreement
33	LC	Letter of Credit
34	FAT	Factory Acceptance test
35	SAT	Site Acceptance test
36	IFSC	Indian Financial System Code
37	AMSS	Automatic Message Switching System
38	OLBS	Online briefing system
39	AFTN	Aeronautical Fixed Telecommunication Network
40	OPMET	The exchange of operational meteorological messages



SECTION – I
NOTICE INVITING TENDER (NIT)

Tender Enquiry No.: CPU/52/0819/9924

Dated: 03.09.2019

1. Director General of Meteorology (DGM) of India Meteorological Department (IMD), Ministry of Earth Sciences (MoES), Government of India on behalf of President of India invites ON LINE TENDER in two bid systems i.e. (i) Technical bid & (ii) Price bid from eligible and qualified firms for supply of following Goods/Articles. Manual bids shall not be accepted.
2. **Name of Goods/Articles/Services: “Procurement of XML Based Automatic Data Switching System with Automated Pre-Flight Information Systems for Briefing, Consultation, Flight Planning and Flight Documentation (On Line Briefing System-OLBS) with integration and Commissioning at Aerodrome Meteorological Offices (AMOs) at four Airports- New Delhi, Kolkata, Chennai and Mumbai”.**
3. **Specification and quantity** : As per tender enquiry document.

4. **Tender schedule is as follows:-**

1.	PRE BID Conference (A) Date & Time (B) Venue	27.09.2019 / 1100 Hrs Conference hall, 2 nd floor, ISSD, Mausam Bhawan, IMD, Lodi Road, New Delhi-110003.
2.	Closing date & time of submission of Tender	21.10.2019/1800 hrs.
3.	Tender Opening date & time (Technical Bid)	23.10.2019 / 1500 hrs.
4.	Place of Tender opening	Central Purchase Unit O/o DGM, IMD, Lodhi Road, New Delhi-110003

5. **Earnest Money Deposit (EMD):** Earnest Money Deposit (EMD): **Rs.44,00,000/-** (Forty Four Lakhs only) with validity of Eight (8) months from the date of closing of tender. EMD shall be accepted from the participating firm only in the form of Bank Guarantee (BG)/Fixed Deposit Receipt (FDR).

SECTION – II

INSTRUCTIONS TO BIDDERS (ITB)

1. Introduction:

The Purchaser has issued this TE documents for procurement of services related as mentioned in “**Request for Proposal (RFP)**”, which also indicates, inter alia, the required stores, delivery schedule, terms and place of work/delivery etc. This section (“General Instructions to Bidders”) provides the relevant information as well as instructions to assist the prospective Bidders in preparation and submission of bids.

Bidders shall have to agree/accept all the terms and conditions of bids including payment terms etc. Acceptance shall be unconditional and bidders shall have no claim and right in future on their terms if any.

2. Language of Tender:

The tender submitted by the bidder and all subsequent correspondence and documents relating to the tender exchanged between the bidder and the purchaser, shall be written in English language.

3. Eligible Goods and Services:

All goods and related services to be supplied under the contract shall have their origin in India or any other country with which India has not banned trade relations. The term “origin” used in this clause means the place where the goods are mined, grown, produced, or manufactured or from where the related services are arranged and supplied.

4. Tendering Expense

The bidder shall bear all the costs and expenditure incurred and/or to be incurred by them in preparation, and uploading their tender including attending the pre-bid conference and or arranging demonstration of Product/Services or Field trials that may be deemed necessary by the Purchaser.

5. Regular visit of website:

Prospective bidders are advised to see CPP portal at <https://eprocure.gov.in/eprocure/app> & IMD website at <http://www.imd.gov.in/pages/tenders.php> on regular basis for any change in NIT schedule, amendment / corrigendum in Tender Enquiry (T.E.) Document including technical requirement and pre-bid minutes etc.

6. Amendments to Tender Enquiry (TE) documents:

At any time, prior to the deadline for submission of bids, the purchaser may, for any reason deemed fit by it, modify the TE documents by issuing suitable amendment(s) to it. The amendment will be uploaded CPP portal eprocure.gov.in/eprocure only. In

order to provide reasonable time to the prospective bidders to take necessary action in preparing their bids as per the amendment, the purchaser may, at its discretion extend the deadline for the submission of bids and other allied time frames, which are linked with that deadline. Prospective bidders are advised to visit/see <https://eprocure.gov.in> as well as IMD website www.imd.gov.in on regular basis for any change in NIT schedule, amendment /corrigendum in Tender Document including technical requirement.

7. Signing and uploading of Tender:

Bidder shall upload their Properly signed and stamped tender on the company letterhead bid ONLINE through CPP Portal (**URL:[https:// eprocure.gov.in/ eprocure/ app](https://eprocure.gov.in/eprocure/app)**), as manual bids shall not be accepted. Only .pdf format of the tender shall be uploaded on CPP portal. The tender shall not contain any eraser or overwriting, except as necessary to correct any error made by the bidder and, if there is any such correction; the same shall be initialled by the person(s) signing the tender as per the two-bid system mentioned in **Section-III, para-2 APPENDIX TO INSTRUCTIONS TO BIDDERS (AITB)**.

8. Alteration and Withdrawal of Tender:

The bidder, after uploading online bid through CPP Portal is permitted to alter / modify its bid within the deadline for submission of bids.

9. Opening of Tender:

The purchaser will open online bids through CPP Portal at the specified date and time and at the specified place as indicated in the NIT. In case the specified date of tender opening falls on/ is subsequently declared a holiday or closed day for the purchaser, the bids will be opened at the appointed time and place on the next working day. Authorized representatives of the bidders, who have submitted online bids through CPP Portal may attend the tender opening, provided they bring with them letters of authority from the corresponding bidders. Since this is a two-bid system, the **Technical Bids** are to be opened in the first instance, at the prescribed date and time schedule. These bids shall be scrutinized, evaluated and approved by the competent committee/ authority with reference to parameters prescribed in the TE document. Thereafter, in the second stage, the **Price Bids** of technically qualified bidders only shall be opened for further scrutiny and evaluation on a date notified after evaluation of the techno commercial tender.

10. Scrutiny and Evaluation of Bids:

10.1 Unresponsive bids:

(Scrutiny separately carried out by a Bid acceptance mechanism prior to technical evaluation). The bids will be scrutinized to determine whether they are complete and meet the essential and important requirements, conditions etc. as prescribed in the TE document. The bids are liable to be treated as non-responsive and will be summarily ignored if followings are not provided along with technical bids.

- (i) Registration certificate of bidding firm with any state or central government body in India or respective country. Credential/document not attached.
- (ii) Tender is unsigned or is incomplete, is not uploaded on e-procurement portal due to any reason with in stipulated period.
- (iii) Properly signed and stamped Checklist (**Annexure-I**) is not properly filled and fully furnished compliance statement is not enclosed.
- (iv) Tender Acceptance Form (**Annexure-II**) not duly signed and stamped. **(i.e. all the terms & conditions of tender document are acceptable.** Original Letter shall be enclosed in technical bid.
- (v) Tender validity is shorter than the required period.
- (vi) Required EMD has not been provided unless exempted.
- (vii) Bidder has not agreed to give the required performance security.
- (viii) Pre-Integrity Pact as per format at **Annexure-V** duly signed on all the pages by the authorised signatory.

10.2 Technical Evaluation:

After the tender acceptance, Bids shall be scrutinized and technically evaluated by the committee constituted by competent authority with reference to parameters prescribed in the RFP/Tender document.

Minor Informality/Irregularity/Non-Conformity:

If during the preliminary examination, the purchaser finds any minor informality and/or irregularity and/or non-conformity in a tender, **the purchaser may waive the same provided it does not constitute any material deviation and financial impact and also does not prejudice or affect the ranking order of the bidders.** Wherever necessary, the purchaser will convey its observation on such 'minor' issues to the bidder asking the bidder to respond by a specified date. If the bidder does not reply by the specified date or gives evasive reply without clarifying the point at issue in clear terms, that tender will be liable to be treated as non-responsive.

10.3 Financial evaluation:

Thereafter, in the second stage, the Price Bids of technically qualified bidders only shall be opened online through CPP Portal for further scrutiny and evaluation on a date and time notified after evaluation of the techno commercial tender.

The purchaser shall evaluate the technically qualified financial bids for **deciding lowest bidder (L-1) on the basis of ultimate landing cost.** Charges towards Insurance, Freight and transportation of goods up to sites etc applicable from time to time for taking purchase decision shall also be added. These should be clearly indicated by the bidder. **Wherever, against a requirement, both indigenous as well as imported offers are received,** the offers for imported stores will be evaluated on the basis of the total landed cost after loading the taxes and other levies etc as may be applicable from time to time for taking purchase decision.

(i) Indigenous stores

1. Basic price.
2. Excise duty (if applicable).
3. **As per prevailing taxes imposed by Govt. of India.**
4. Insurance, freight and transportation of goods up to sites.

(ii) Imported stores

1. Total Net FOB price in foreign currency of the project.
2. Plus Freight & Insurance charge @10% of FOB price of shipment of stores coming through customs.
3. Custom Duty is applicable on hardware, software, equipments, instruments, consumables and other items etc. coming through customs Clearance). Custom duties on services are not levied. Custom duty on the imported segment will not be added while deciding on the lowest bidder during the evaluation of bids.
4. Plus Landing clearing and Bank charges @1.0% of total net FOB price of the project.
5. Plus actual Inland freight/insurance/transportation of goods in India up to the user sites quoted by bidder.
6. Plus taxes applicable in India.

IF ANY CHARGES ARE NOT INDICATED SPECIFICALLY AND SEPARATELY IN THE BID, SAME WILL BE TREATED AS INCLUSIVE.

10.4 Conversion of currencies to Indian Rupees and Exchange Rate Variation (ERV):

If the Tender to quote their prices in different currencies, all such quoted prices of the responsive bidders will be converted to a single currency viz., Indian Rupees for the purpose of equitable comparison and evaluation, as per the BC selling rate of exchange of State Bank of India prevailing on **the date of opening of financial bids**. No variation in price will be allowed if the variation in the rate of exchange remains within the limit of $\pm 2.5\%$ (Two point Five percent) of tender value. In case of foreign exchange fluctuations, after the expiry of the validity of the tender, a margin of 10%, when it exceeds the variation limit of **$\pm 2.5\%$ of tender value**, shall be admissible for meeting the expenditure, to be debited by SBI at the current rate of currency, while making payment to foreign firm.

11. Packing and Marking:

The packing for the goods provided by the supplier should be strong and durable enough to withstand, without limitation, the entire journey during transit including transshipment (if any), rough handling, open storage etc. without any damage, deterioration etc.

SECTION – III

APPENDIX TO INSTRUCTIONS TO BIDDERS (AITB)

1. Pre-Bid Conference:

Pre-bid conference shall be held as per Notice Inviting Tender (NIT) schedule so as to provide an opportunity to the participating bidders to interact with IMD with regard to various tender provisions/clauses, before the bids are submitted. Bidders should depute their authorised representative for pre-bid meeting. In case, due to the points/doubts raised by the prospective bidders, needs to be modified, and then the same will be considered for modification. After pre-bid conference, tender conditions will be frozen. **No change will be permissible after opening of Bids.** Clarification needed if any may be sent before commencement of pre-bid meeting. No reply in this regard shall be sent to individual bidders. **Pre-Bid minutes shall be uploaded on e-procurement portal at <https://eprocure.gov.in/eprocure/app>.** Pre-bid queries should be sent by five days earlier to the pre-bid meeting on email ID: cpu.imd@imd.gov.in and sl.singh@imd.gov.in, sankar.nath@imd.gov.in.

2. Submission of bids:

Bidders are requested to submit their Bid/quotation in two **parts-**

Part-1 should contain Techno-Commercial Bid and duly signed blank price bid (without indicating the cost) and scanned copy of EMD.

Part-2 should contain only the price bid indicating the cost and applicable GST/Taxes etc.

The bid should be submitted electronically through CPP Portal www.eprocure.gov.in/app . The Part-1(technical bid) and Part-2(Price bid) should be uploaded separately indicating the Tender reference/details. Please note that to participate in the tender Digital Signature (DSC) has to be obtained. The bidders are advised to obtain DSC (Digital signature Certificate) from the authorized agent of NIC (the list provided in the NIC portal) and to register with NIC. In case the Price/Cost is revealed in the technical bid the tender will be treated as invalid or rejected.

The responsibility to ensure the timely submission of bid lies with the bidder. Bids submitted through FAX or e-mail will not be considered. Bidders shall also attach scanned copies of all the requisite documents i.e. Earnest Money and other certificates/documents specified in the tender documents. The bids are to be submitted (electronically) as per the bidding type indicated in the front page of tender. No manual tender is acceptable.

2.1 Part-1 (Techno–Commercial bid)

The following documents are to be furnished by the bidder along with their **Technical Bid**. Bidder shall upload following documents on CPP PORTAL <https://eprocure.gov.in/eprocure/app> and shall also submit the originals on or before opening of tender:

- (i) Registration certificate of bidding firm with government body in their country. Credential/document shall be attached.
- (ii) Checklist section (Annexure-I) properly filled and signed.
- (iii) Scanned copy of Earnest Money Deposit (**EMD**) **in the form of BG/FDR only**. Original EMD in physical form shall be submitted to Central Purchase Unit of IMD on or before opening of tender.
- (iv) Documentary evidence for fulfilment of Eligibility/Qualification criteria(s).
- (v) Copy of agreement between bidding firm in India and their foreign principal, if any, indicating precise relationship between them and their mutual interest in this tender must be furnished along with their technical bid.
- (vi) Tender terms & Conditions Acceptance Form (Annexure-II) duly signed. (i.e. bidder has agreed to all the terms & condition of tender enquiry document)
- (vii) **Along with technical bid, List of deliverables (un-priced/ without price) shall be submitted with detailed make, model & country of origin etc. as per Annexure-VIII.**
- (viii) Pre-Integrity Pact as per format at Annexure-V duly signed on all the pages by the authorised signatory.

Note: The above documents (signed and scanned) shall be attached in the beginning of technical bid.

2.2 Part-2 (Price Bid):

- (i) All pages of the price bid should be page numbered, indexed and signed by authorized signatory with company/BIDDER seal.
- (ii) Price Bid shall be prepared as per price bid format (**Annexure-IV**).
- (iii) Costing, of each and every item, sub items offered in bidder's technical bid, shall be done with all breakup prices.
- (iv) The Bidder shall indicate on the Price Schedule specifying all components (main units and sub units etc. of each item) of prices shown therein including the unit prices and total tender prices of the **goods (H/w & S/w), services, packing, inland transportation/freight/insurance to the sites, GST etc** against the requirement.
- (v) Wherever, the Purchaser's invitation to tender calls for installation and commissioning or supervision of installation and commissioning of the instrument/equipment by the bidder, the bidder must clearly and separately quote the prices for the supply of the stores and the charges and the terms for installation and commissioning or supervision of installation and commissioning as the case may be. The charges towards installation and commissioning should not be included in the price of the stores.
- (vi) **The Supplier shall bear all the** taxes (IGST/SGST/CGST/Income-tax/or any other taxes) levied by the state/central government, as per the rates prevailing at the time of undertaking the job in accordance with the Income-tax in India.
- (vii) IMD will provide the Custom Duty Exemption Certificate (CDEC) for imported items. In case the CDEC is not accepted the payment of custom duty will be reimbursed to the bidder by IMD on proof of actual payment.
- (viii) CAMC shall be only for the maintenance of stores (equipment and software only) therefore prospective bidders are advised to quote CAMC charges accordingly and

specifically. **It should not be quoted in terms of** percentage of project cost as consumable, transportation, warranty; installations, training etc. are not covered under CAMC. **Price bids shall not be accepted if CAMC charge quoted in percentage.**

- (ix) In case any charges not mentioned in the price bid, it will be treated as all the charges are free of cost for that item.
- (x) Vendor shall quote prices on F.O.R destination (sites of consignee) basis and Payment shall be paid in Indian rupees only.
- (xi) The bidder supplying imported goods shall quote only in Indian Rupees if purchase order to be placed to them. It is the responsibility of Indian BIDDER to pay custom duty etc. IMD shall not be responsible for custom clearance. Prices quoted by the bidder shall remain BIDDER and fixed during the currency of the contract.
- (xii) Statutory levies, taxes and duties etc., if any, chargeable on the goods are on actual basis as applicable.
- (xiii) If there is a discrepancy between the amount expressed in words and figures, the amount in words shall prevail.

Note: Price bid shall prima-facia shall be rejected in case of any deviation from the technical bid of the bidder and found that any fact concealed or hided in price bid/technical bid.

SECTION – IV

Eligibility & Qualification criterion for Bidders

Bidders in given below category are eligible to participate in tender subject to registration of the BIDDER with government bodies as per act /rules in their country and also fulfil of other specific qualification criteria, terms and conditions mentioned in technical requirement section and tender enquiry document also.

- (i) Original Equipment Manufacturer (OEM) with back to back support of OSC.
- (ii) Original Software Company (OSC), who developed the main application software with back to back support of OEM.
- (iii) Integrators/ Authorized dealer/ Authorized Supplier from Original Equipment manufacturer (OEM) /Developer of main application software company (OSC) etc. The bidderer shall have to submit authorization certificate from OEM and OSC etc. that they will provide after sale service support for entire period of system operation during warranty and CAMC.
- (iv) OEM/ System Integrator/ Authorized dealer/ Authorized Supplier must have minimum three years experience in at least three projects of installation, integration of software & OS on servers, PCs, network equipment like switches, routers, firewall etc with their configuration.
- (v) OSC must have experience of successful design, development, installation, integration/ commissioning and maintenance of at least one AMSS/XML based data switching system and **Automated pre-flight information systems for briefing, consultation, flight planning and flight documentation(OLBS) during last five years ending on the date of bid opening.** Supporting document must be submitted along with the technical bid.
- (vi) Bidder should submit the details of experience (including experience of OEM & OSC) in the following format along with supporting documents i.e user certificate in the technical bid:

S.No.	Name/ Title of Project executed	Name of Client with contact details	Details of work executed under the project	Cost of Project (Rs. Cr.) & Year of Completion	Remarks
1					
2					
3					
4					
5					
Total					

(vii) BIDDER from India quoting on behalf of their foreign principal:

(a) BIDDER in India (Integrators/ Authorized dealer/ Authorized Supplier of their foreign principal) must be registered with Government of India if quoting **in foreign currency on behalf of their foreign principal and payment has to be made to their foreign principal in foreign currency for goods imported directly for the contract.**

(b) Copy of agreement specific to this particular tender, with their foreign principal with the precise relationship between them, their mutual interest and nature of services which would be available from bidding firm from India, shall be submitted along with their tender. Whether foreign principal has agreed to provide technical support and spares after sale services. The type and nature of after sales services to be rendered by the Indian Agent

(c) **BIDDER quoting on behalf of their foreign principal shall be responsible for furnishing performance security for the entire project.**

(d) Either the BIDDER in India on behalf of their foreign principal or the foreign principal can directly bid in the tender but not the both.

(e) Price to be quoted in Indian currency towards portion of allied work and services which are to be undertaken in India (like installation & Commissioning of equipment etc.).

(f) The complete name and address of the bidding firm in India and its Permanent income tax Account Number (PAN) as allotted by the Indian Income Tax authority must be submitted.

(viii) Foreign BIDDERS registered in their countries may participate in the tender. Proof of registration shall be attached with technical bid. They may associate their local partner in allied services in India. However the foreign BIDDERS shall be responsible for their local partner's work. Cost towards allied work by their local partner shall be quoted in INR only and shall be paid to local partner duly certified by foreign firms. **Performance Security shall be furnished by foreign supplier including indigenous components to be taken by their representative.**

(ix) The bidder should have minimum average annual **turnover of INR 10 Crore or equivalent value for last three years** ending (2016-17,2017-18,2018-19). Combined turn over with its foreign principal will also be considered. The bidding firm should not have incurred financial loss for more than one year in last three years ending 31.3.2019. All financial standing data should be certified by certified accountants (chartered accountant/ cost accountant or equivalent). However, if the entire product (hardware and software) offered for the solution is Make in India, then the turnover clause will be excluded as per as per "Public Procurement (Preference to Make in India) Order, 2017 (PPP-MII Order 2017) issued by DIPP.

(x) **Pre-Contract Integrity Pact (Annexure-V) is to be duly filled and signed by each bidder and submitted along with the bid.**

SECTION – V

Schedule of Requirement

1. Background:

India Meteorological Department has a very extensive Telecommunication network with a Regional Telecom Hub (RTH) in Mausam Bhavan, New Delhi and Six Regional Automatic Message Switching Systems (AMSS) at Palam, Kolkata, Mumbai, Chennai, Nagpur and Guwahati airports.

These Six AMSS are connected to the GTS (Global Telecommunication System), the central hub of WMO through RTH New Delhi. RTH New Delhi is one of the 15 designated RTHs and three World Meteorological Centre (WMCs) on the Main Telecommunication Network (MTN) of the GTS for exchange of meteorological data and products globally. These six AMSSs are also connected to the AFTN (Aeronautical Fixed Telecommunication Network) for the exchange of operational meteorological messages (OPMET). The responsibility of these AMSS, therefore, is to collect and exchange the meteorological data and products from the various observatories, meteorological centres (MCs), Meteorological offices(Airports), Radar Stations(i.e. DWR) and other institutions under their control among themselves and to WMO/ICAO member countries through RTH New Delhi / AFTN network.

IMD being the national meteorological service provider provides the meteorological services to all the aviation operators at all the major airports. IMD is also providing aviation meteorological services to the aviation operators through dedicated automated pre-flight information systems for briefing, consultation, flight planning and flight documentation (**OLBS**) from AMO Palam (Delhi) & AMO Chennai since 2012-2013.

1.1 Present Set-up

The present AMSS software includes Weatherman and Flightman from M/S Netsys International Private Limited installed on SUN FIRE 280R and SUN BLADE 2000 with sun Solaris 9.0 platform respectively for message switching, bulletin creation and aviation meteorological product generations at Palam, Kolkata, Mumbai, Chennai (installed during 2003). AMSS at Guwahati and Nagpur have been installed during 2012 from M/s Corobor Pvt. Ltd.

All the four AMSS are connected with AMSS of respective Airport Authority of India (AAI), Airport Meteorological Offices (AMOs), Meteorological Centres (MCs), RADAR Stations Indian Air Force / Indian Naval Met. Offices and meteorological observatories under their jurisdiction either through VPN or a dedicated leased line circuits or internet. They are also connected to RTH New Delhi through VPN circuits and internet and support both WMO and ICAO formats for exchange of meteorological data.

The present web based OLBS software from M/S NetSys International Private Limited is installed on Dell Power Edge T110 II server at AMO Chennai and Palam during 2012-2013 for providing online meteorological services to all the aviation community operating at all the Indian airports for national and international services.

1.2 Scope of the work and system requirement under present tender

It is proposed to supply XML based automatic data switching system) on turnkey basis at Palam, Kolkata, Mumbai, Chennai airports and OLBS at Palam and Chennai airports with state of the art technology at four airport locations Chennai, Kolkata, Mumbai, New Delhi, as per the latest guidelines of WMO and ICAO including Amendment 77 and 78 to ICAO Annex-3 (<https://www.icao.int/APAC/Documents/edocs/Guidelines%20for%20IWXXM%20Implementation.pdf>) .The system (AMSS) as a whole (Hardware & Software) should be WIS(WMO Information System) and WIGOS (WMO Integrated Global Observing System) compliant as stated in the latest recommendations of Commission for Basic System and subsequent amendments/updates from time to time by WMO& ICAO. Installation, implementation and commissioning of the entire system shall be the responsibility of the bidder. Both the Software (OS & Application) should preferably be installed on licensed VM infrastructure on two servers at each site.

Details of network block diagram and Schematic diagram of the proposed system is given in Annexure- VI.

2. Overview of Requirements.

- 2.1 Supply of XML based automatic data switching system &OLBS including application software and compatible operating system.
- 2.2 Installation and Integration of the above mentioned complete systems i.e. hardware and software (application and OS) with IMD Network and configuration of network equipment like switches, routers, firewall etc. will be the responsibility of the bidder
- 2.3 It is intended to install and commission latest proven system with latest configurations (not older than one year of an industry standard proven hardware model, operating system and application software edition) as per the latest WMO and ICAO guidelines for AMSS to support all the latest and running communication line/circuit, protocols and message/data/bulletin formats and depending on the resources available and the national requirements.
- 2.4 XML based data switching system and OLBS should be based on Unix/Linux platform for each and be connected to a high capacity RAID 5 disk storage on two separate I/O channels for each location
- 2.5 Application software shall be handling both the meteorological communications (viz. WMO & ICAO); and meteorological bulletins, product generation to meet the aviation meteorological service requirements of the aviation operators and aerodrome.
- 2.6 The network configuration should be carried out based on an agreed technology available with the participating centres.
- 2.7 All the system including routers, switches, modems etc. should be rack mounted.
- 2.8 Provision of firewall to protect the system from unauthorised users and other security reasons.
- 2.9 The network should be ready for handling the voluminous data (like radar/ NWP/ satellite data/ products etc.), satellite communication channels, terrestrial links, managed data network services, use of Internet, IPV4 and IPV6 based communications etc.

- 2.10 The network should be able to handle industry standard communication protocols including WMO and ICAO protocols.
- 2.11 The system should have high availability software on both the servers with active/active and active/ hot standby configuration.
- 2.12 Operating system should be of latest version and the combination of operating system and application software should give optimal performance during operation on the suggested specifications for latest and proven hardware of every system & sub-system.
- 2.13 The Graphical User Interface (GUI) of application software should be user friendly and be manageable with provided training and documents.
- 2.14 Proper and sufficient documentation should be provided for system administration, operation, and in-house maintenance including system backup & recovery etc. The documentation should include installation layout diagram, cable tagging for both the systems for trouble shooting, fault diagnostic and rectifications etc. Hard bound copies (two nos. Each) of all the documents along with soft copy should be provided for e. Site.
- 2.15 Bidder shall submit the detailed technical data sheets of the proposed Hardware and network equipments required for the proposed XML based data switching system and OLBS software suites, separately like server, router, switches, firewall, work station, printers, METAR display system with distribution facility, UPS etc (**Annexure-VIII**) for dual system (live and hot standby) along with technical bid. Any additional requirement, besides the requirements given under **Section-VI** should be proposed by the bidder for smooth system implementation.

SECTION – VI

Technical specifications (including Drawings) and Quality Assurance (Inspections and Tests)

1.0 **HARDWARE:**

1 set for each location: (Items mentioned under point 1.1 to 5 makes one set).

1.1 Rack Mount Server (Quantity – 2 Nos.)

Parameters	Specifications
Motherboard:	TPM motherboard
Processor:	Intel® Xeon® Processor series ((2x Intel®Xeon®processor, 2.2GHz,Turbo,HT,20C/40T Chassis with up to 16, 2.5" Hard Drives)
No of processors:	Two
Memory:	16x16GB , 2666MT/s RDIMMs Memory,
Disk Storage:	7x1.2TB 10K RPM SAS 12Gbps 2.5in Hot-plug Hard Drive
RAID Controller:	SAS RAID Controller with RAID 0, 1 5&10
Power Supply:	N+1 Hot Plug Redundant Power Supply with separate AC inlets for all power modules.
Cooling:	N+1 Hot Plug system redundant fans
Network:	2x10Gb and 2x1Gb Network Card
I/O Ports:	USB 2.0/ higher, one VGA/ SVGA and ports compatible with network card
DVD Optical Drive(R/W):	Internal DVD Writer with 16X write speed or higher.
Server Management Software:	Web based Intelligent Manageability having the following features: - <ul style="list-style-type: none">•IPMI ver 2.0 or higher implementation with a dedicated network interface for out-of-band management.•Support Remote Access & Remote monitoring•Server trouble shooting•Health Indicator and Corrective Action including Automated Power Cycling

	<ul style="list-style-type: none"> • Automatic Server Recovery •Raid Array Diagnostic Tool with ability to view Disc status and array status with pre-failure warning capability.
Storage Management:	Intel® Integrated hardware RAID Module
Operating System:	Linux
Administration:	Local as well as via Integrated Remote Access Controller

1.2 KVM SWITCH (Quantity -1No) compatible to the servers offered with following specifications:

Parameters	Specifications
No. of Hosts to be Manage	4 (minimum)
VGA Resolution Supported	1600x1200 or 1680x1050 (widescreen) native or better.
Console Interface	Accepts either PS/2 or USB keyboards and mice.
Connectivity Interface	Dual interface - supports computers with PS/2 or USB keyboards and mice
Switching:	Hot-Key and front push-button switching
Indicator:	Lighted front panel buttons indicating connections and status.
Emulation:	Complete keyboard and mouse emulation for error free booting and real time switching
Power Supply Sensing:	Auto-sensing power supply built directly into the switch.
Host Scanning:	Auto-scanned monitoring of attached computers on regular intervals without manually switching from port to port
Installation Methods:	Mounted in the racks
Console Cables Required:	Minimum 4Nos. of 2 meter Dual PS2/USB along with VGA Cables required for connecting 4 systems

1.3 KVM Console (Quantity-1 No): compatible to the servers, offered with following specifications:

Parameters	Specifications
No. of Hosts to be Managed	4(minimum)
Form Factor	Rack Foldable TFT in 1U form factor with enough room to mount a KVM switch behind it
Size	17" diagonal WXGA+ monitor or better
Technology	Flat Panel TFT active matrix with Backlit panel technology to maximize brightness and off-axis viewing angles
Resolution	At least 1600 x 900 at 75 Hz
Aspect Ratio	16 x 9 or better
Keyboard/Mouse Output	PS2 and USB connectors
Scroll Keys:	Four Scroll Keys in inverted T fashion located between the keyboard and numeric keypad for easy access.
Cable Management:	Fully integrated cable management arm.
Certification:	Energy star certified console, TCO-5, ROHS

1.4 Rack (Quantity -1No):

One Rack with proper arms and channels, power points and proper perforated doors (front and back both side) with cooling arrangement etc., for servers sufficient to accommodate at least two servers and network equipments, KVM console and KVM Switch and other associated accessories etc. with following specifications:

Parameters	Specifications
Rack Heights	Minimum 24 U
Side Panels	Standard Removal Lockable Side Panels
Doors	Lockable perforated front and rear doors Split Rear doors
PDU& Mounting	Minimum 2 Nos. Single Phase 12 socket PDU with Circuit Breaker. PDU mounting should be tool-less
Side Wall Compartments	Six sidewall compartments to support installation of 1U PDUs and switches without unnecessarily taking up valuable rack space Top Cable Exits

Cable Management	1. Front cable access portals and a large rear adjustable opening to provide improved overhead cable management. 2. Bottom Cable Exits. 3. Velcro clips pack. 4. Proper tagging and marking on cabling, equipments and accessories etc.
Stabilizers	Standard front and side stabilizers for static rack stability when equipments are routinely installed, removed or accessed
Leveling Pads	4 easily adjustable leveling pads ensuring stability and preventing rolling on casters
U Markings	Clear U markings on mounting rails to aid in space planning and installation
Casters	Fixed front and rear swivel heavy duty casters that can easily accommodate the maximum load capacity, while still being less than 2 meters in height to allow the rack to fit under most doorways
Hinges	Quick release hinge design to allow the front door to be easily mounted on either side of the cabinet. This provides for flexible placement alternatives, due to opening of door either direction
Rack Cooling	Top Exhaust system along with fans. The rack should have air flow optimization.
Blanking Panels	1U 100-pack Carbon Universal Filler Panel
Rack Lighting	Rack light system mounted on the rack roof and used to provide light to the rear section of rack.
External Height	49/1245 (inches/mm) minimum to accommodate the servers, KVM console, network equipments and associated accessories etc.
External Depth	Minimum 31.5/800. (inches/mm) to accommodate the servers, KVM console, network equipments and associated accessories etc.
Load Capacity:	At least 500 Kg.

1.5 Supervisory & Operator Terminals (Quantity-7 nos.):

Specification of each terminal is given below:

- a) Intel Core i7 processors @ 3.6 GHz or latest with minimum 8 MB cache memory.
- b) Memory: Minimum 8 GB RAM of latest technology.
- c) HDD: Minimum 1 TB SATA drive.
- d) N/W Card: PCI Gigabit Ethernet card supporting 100/1000 Mbps LAN-Two cards (minimum)

- e) 19" colour LCD TFT Monitor with minimum 1280 X 1024 resolutions - one with each Terminal.
- f) Multimedia keyboard and scroll optical mouse.
- h) DVD Writer: Minimum 52X CD Writing and Reading, Minimum 16X DVD Writing.
- i) Operating System: Compatible with the application software. However, it is necessary to have dual OS (LINUX / Windows) in at least 2 out of 9 terminals. Antivirus solution for all Supervisory and Operator Terminals should be provided till entire warranty and CAMC period.
- j) USB Ports: Four numbers

Or

The latest system with higher configuration.

1.6 COLOUR SCANNER (Quantity: 1 no.):

Type : CCD Scanning
Scan resolution : 2400 x 2400 dpi (minimum)
Scan size : A4
Gray scale levels : 256

1.7 COLOUR LASERJET Printer (Industry Standard) (Quantity- 1 no.):

Print Size : A-4 and A-3 size
Resolution : 1200 x 1200 DPI (Graphic) (minimum)
Memory : 64 MB RAM (minimum)
Print Speed : 35 ppm (minimum)
With Network port (card), USB port. Printer shall be used in network also.

One full set of Printer cartridges to be supplied with each printer.

1.8 LASER Printer (Duplex Monochrome- Industry Standard) (Quantity -2nos.):

Print Size : A-4 size
Resolution : 1200 x 1200 DPI (Graphic) (minimum)
Memory : 64MB RAM (minimum)
Print Speed : 35 ppm (minimum)

One full set of Printer cartridges to be supplied with each printer.

1.9 Laptop (Quantity: 1 no.):

Specification of each laptop is given below:

Processor: Intel i7 Processor @ minimum 2.8 GHz with minimum 4 MB L2 Cache memory.

- a. Memory : 8 GB RAM
- b. HDD : 1TB
- c. Network Card: 100/1000 Gigabit Fast Ethernet

- d. Wireless Connectivity : Integrated Wireless connectivity and integrated Blue Tooth
- e. DVD Writer: Integrated DVD writer 8X (minimum).
- f. Key Board : Keyboard with Touch Pad
- g. Minimum 2 USB ports.
- h. Minimum 2 GB Graphics
- i. Minimum 15.6- inch
- j. Operating system: Windows with latest Antivirus Software (with minimum one year licence) should be provided

Or

The latest system with higher configurations.

1.10 Modem (Quantity-2 nos.)

Mobile Interface: Two GSM/ GPRS modems with 3G and 4G compatible to support two-way mobile communication (SMS) from remote locations.

1.11 Router: CISCO makes (Quantity-2 nos.):

Each router should have console, auxiliary and multi-WAN/LAN ports with minimum 4 WAN ports and 4 LAN ports along with firewall, VoIP and VPN (supporting minimum 3DES encryption) modules. All required cables, leads, connectors and associated accessories should be provided. Router should be EAL2/NDPP certified from common criteria organization. Switches should be IPv6 Certified/Logo ready from day one.

- Dual Integrated Power Supplies
- IOS UNIVERSAL CISCO IOS Software Image latest Processor Multi core HWIC Card for WAN Connection 4
- Minimum Flash 4 GB
- Interface slots along with enhanced high-speed WAN interface card [EHWIC] 4*2= 8
- Minimum SDRAM 4GB
- Service Module Slot 4
- Form Factor 3RU(Rack Unit)
- Integrated WAN Port 4GE(2 Small Form Factor Pluggable)
- State full Firewall
- Intrusion prevention Content filtering Onboard hardware VPN acceleration (Digital Encryption Standard [DES],Triple DES [3DES], and Advanced Encryption Standard [AES]) AAA
- Support voice and video
- Permanent LICENSE should be available for data, security, communication
- Minimum 8 Integrated 10/100/1000 Ethernet Port

- Additional minimum SFP Port 2
- Additional 10/100/1000 Ethernet Port - 1 slot
- Minimum 4 Port Voice and video DSP Support,
- IPV6 support from day one.
- Supports at least 1 Gbps data speed

1.12 Hardware Firewall: (Quantity: 1 no.)

Each Firewall should have minimum following configurations and should be able to fulfill all the following requirements/features without any additional module/card etc.

1.12.1 Functional Specification – Firewall

- (i) The security gateway must have throughput, connection rate, and concurrent connections requirements as defined in performance section.
- (ii) Solution must have access control for at least 300 predefined /services/protocols and solution should be able to define custom services.
- (iii) Must allow security rules to be enforced within time intervals and have provision of configurations with an expiry date/time.
- (iv) The communication between the management servers and the security gateways must be encrypted and authenticated with PKI Certificates.
- (v) The firewall must support user, client and session authentication methods.
- (vi) Solution must include the ability to work in Transparent and Bridge mode with fail open card.

1.12.2 Functional Specification – Web content, URL & APP filtering.

- (i) Solution must provide Applications database which must contain more than 2000 known applications.
- (ii) Solution must have a URL categorization that exceeds 150 million URLs.
- (iii) Solution must be able to create a filtering rule with multiple categories.
- (iv) Solution must have users and groups granularity with security rules.
- (v) The security gateway local cache must give answers to 99% of URL categorization requests.
- (vi) Solution must have an easy to use, searchable interface for applications and URLs
- (vii) Solution must categorize applications and URLs by Risk Factor.
- (viii) Solution must provide a mechanism to inform or ask users in real time to educate them or confirm actions based on the security policy.
- (ix) Solution must provide a mechanism to limit application usage based on bandwidth consumption.
- (x) Solution must provide the option to modify the Blocking Notification and to redirect the user to a remediation page.
- (xi) Solution must include a Black and White lists mechanism to allow the administrator to deny or permit specific URLs regardless of the category
- (xii) Solution must have a configurable bypass mechanisms

1.12.3 Functional Specification - IPSEC VPN

- (i) Internal CA and External third party CA must be supported.
- (ii) Solution must support 3DES and AES-256 cryptographic for IKE Phase I and II IKEv2 plus "Suite-B-GCM-128" and "Suite-B-GCM-256" for phase II.
- (iii) Solution should have at least the following Diffie-Hellman Groups: Group 1 (768 bit), Group 2 (1024 bit), Group 5 (1536 bit), Group 14 (2048 bit), Group 19 and Group 20.
- (iv) Solution should have data integrity with md5, sha1 SHA-256, SHA-384 and AES-XCBC.
- (v) Solution must include support for site-to-site VPN in the following topologies:
- (vi) a) Full Mesh (all to all), b) Star (remote offices to central site), c) Hub and Spoke (remote site through central site to another remote site)

1.12.4 Functional Specification –IPS

- (i) IPS must be based on the following detection mechanisms: exploit signatures, protocol anomalies, application controls and behaviour-based detection.
- (ii) IPS and firewall module must be integrated on one platform.
- (iii) The administrator must be able to configure the inspection to protect internal hosts only.
- (iv) IPS must have options to create profiles for either client or server based protections, or a combination of both.
- (v) IPS must provide at least two pre-defined profiles/policies that can be used immediately.
- (vi) IPS must have a software based fail-open mechanism, configurable based on thresholds of security gateways, CPU and memory usage.
- (vii) IPS must provide an automated mechanism to activate or manage new signatures from updates.
- (viii) IPS must support network exceptions based on source, destination, service or a combination of the three.
- (ix) IPS application must have a centralized event correlation and reporting mechanism.
- (x) For each protection the solution must include protection type (server-related and client related), threat severity, performance impact, confidence level and industry reference.
- (xi) The administrator must be able to define network and host exclusions from IPS inspection.
- (xii) Solution must protect from DNS Cache Poisoning, and prevents users from accessing blocked domain addresses.

1.12.5 Functional Specification –Anti-Virus

- (i) Real-time detection of viruses and malicious code at the gateway for SMTP, POP3, HTTP ,FTP Internet traffic and others if any.
- (ii) Option to configure to respond to virus detection in several ways i.e. Delete the file; quarantine the file, Alert email.

- (iii) In terms of SMTP, AV scanning, the solution should not act as mail relay or MTA by itself.
- (iv) Facility to block files based on file extensions over HTTP, FTP, SMTP, POP3 as well as IMAP
- (v) Block viruses and worms from penetrating into an organization's internal network through e-mail attachments, malicious Web pages, and files obtained through FTP

1.12.6 Hardware & Performance & Architecture

- (i) Solution should have following deployment modes mandatory
 - a) L3 Mode
 - b) L2/Transparent Mode
- (ii) Solution should have Software Bypass for the IPS function.
- (iii) Solution should have throughput of minimum 3 Gbps 1518 Byte for Firewall and minimum 300 Mbps for IPS.
- (iv) Solution should have minimum 15000 New connection/sec
- (v) Solution should have minimum 1 Million Concurrent connection
- (vi) Solution should have minimum 400 Mbps IPSEC Throughput
- (vii) Solution should have local HDD of minimum 200 GB for storing log activity of the system.
- (viii) Solution should have minimum 4* 1G Copper supplied with the appliance and should have an option to upgrade to **4*1G SFP Ports** additional interfaces.

1.12.7 BOT and Malware Prevention:

Bidder can provide this feature along with UTM or they are free to offer for dedicated appliance /solution which meet hardware performance; no. of ports; storage capacity of UTM and feature to fulfil the objective.

- (i) Solution should be a purpose-built, specialized threat protection solution or engine, which hunts for these hidden threats, utilizing various detection technologies and analysis patterns. Some of the Important components (but not limited to) following is expected from the solution:
 - Detection and Analysis of malware patterns.
 - Identification & correlation of command and control communication, correlation of malware and communications evidence.
 - Terminates the criminal communications.
 - Full forensic evidence and reporting.
- (ii) Solution should be able to get deployed in both Inline modes & Out of band monitoring (in case of dedicated appliance), detection only mode (in case of functionality on core firewall Platform) on the gateway required by the final design.
- (iii) Solution should be a purpose-built, specialized threat protection solution.
- (iv) Solution should be able to work in proxy environment and still be able to identify infected machine.
- (v) Solution should be able to detect the malicious URLs serving malware and drive by download patterns.
- (vi) Solution should analyse the behaviour of the communications to detect any unforeseen behaviour hinting to be of malware or bots etc.

- (vii) Solution should be able to profile communication & analyze network traffic to determine, if the destination is suspicious, known to be C&C, has a low reputation etc.
- (viii) Solution should be able to detect and analyze following protocols (but not limited to) HTTP, HTTPS, DNS, SMTP (inbound and outbound), IRC, ICMP, peer to peer etc.
- (ix) Solution should be able to inspect HTTPS communication.
- (x) Solution should be able to identify the Botnet's IP, URL, DNS and it should also be able to identify the Command and Control communication and segregate the same from the regular communication between user and server
- (xi) Solution should be able to identify the malware class like used for Spam, Data theft, DOS & DDoS (Distributed Denial of Service) etc.
- (xii) Solution should be able to correlate the information from malware information and communication evidence to immediately identify an attack.
- (xiii) Solution should be able to block the infected communication between the infected user and C&C while allowing the clean communication.
- (xiv) Solution should be able to block communication to malicious URL serving drive by download malwares.

1.12.8 Anti-Spam & Email Security

Firewall/UTM should be configured for Anti-Spam & Email Security features.

1.12.9 Additional Features Required

- (i) Firewall/UTM should have ICASA certification for Firewall, not necessary the exact model or product line. IPS should be NSS recommended.
- (ii) Vendor should also have EAL 4+ and FIPS 140-2 lab certification, not necessary the exact model or product line.
- (iii) Firewall/UTM appliance must be in Leader for Gartner Magic quadrant for UTM for Last two consecutive years

1.12.10 Logging and Reporting:

- (i) Appliance should have configurable options to enable logging at a firewall policy level.
- (ii) Appliance should be able to log denied traffic details.
- (iii) The proposed system should be able to generate real time traffic reports – for all functions requested in the RFP.

1.12.11 24 ports Managed Switches (10/100/1000 Mbps): (Quantity 2 nos.)

Each L2 switch should have the following specification Stacking capability with Gigabit connectivity, redundant power supply and Power over Ethernet Plus (PoE+) capabilities along with AC power cord. Switches should be EAL2/NDPP certified from common criteria organization. Switches should be IPv6 ready from day 1.

2.0 Current weather Display System (METAR Display system): 1 set

Each set of METAR display system should consists of following components:

- (i) IP colour TV (minimum 26" – 12 Nos.)
 - (ii) PCs: Qty-2
 - (iii) System software (on each pc)
 - (iv) Application software (on each pc)
 - (v) Network switch and connecting cables, power leads, power distribution boxes and associated accessories for all 12 locations in different floors of ATC building.
- Laying of cables and installation of all units to be done by the bidder as per requirement of the project.

Minimum Specification of each PC is given below:

- a) Intel Core i7 processors @ 2.93 GHz or latest with minimum 8 MB cache memory.
- b) **Memory:** Minimum 8 GB RAM of latest technology.
- c) **HDD:** Minimum 1 TB SATA drive.
- d) N/W Card: PCI Gigabit Ethernet card supporting 10/100/1000 mbps LAN-Two cards
- e) 19" color LCD TFT Monitor with minimum 1280 X 1024 resolution - one with each Terminal.
- f) Multimedia keyboard and scroll optical mouse.
- g) DVD Writer: Minimum 52X CD Writing and Reading, Minimum 16X DVD Writing.
- h) Operating System: Compatible with the AMSS application software.

If Windows then Antivirus solution for all Supervisory and Operator Terminals should be provided during the warranty and AMC period also.

2.1 UPS: 1 set

Each set comprise of **two online UPS of 15KVA** each with 2 hours backup in hot standby redundant mode of operation suitable for operation at respective sites in Indian environment for smooth running of the system supplied.

2.1.1 The UPS should be branded like APC, Tata Libert, Socomec.

2.1.2 Battery Type: Sealed Maintenance Free of reputed standard/ branded make.

NOTE: FOR BIDDERS:

- Tenders shall indicate Battery Make/Model Battery Voltage, AH capacity and quantity.
- Bidder shall furnish Type Test Report for UPS quoted along with Tender from independent Govt. approved Lab.
- Manual & static By-Pass Switch shall be provided for the maintenance of UPS.
- Details of charging mode with charging current may be indicated by the bidders in their offer.

- UPS should be suitable to supply output power and charging current at the same time.
- Enclosure of UPS shall meet the IP-20 protection requirements to IS: 13947 (Pt. 1. /1993).
- UPS shall have suitable communication port for interfacing purpose and remote monitoring.

2.2 COMMUNICATION SUB-SYSTEM: 1 set

2.2.1 Communication sub-system should be support the following WMO guidelines.

The communication link/ network would be:

- compatible with an agreed technology available to the participating centres
 - Capable of handling the data volumes.
 - Compatible to communicate with satellite communication channels, terrestrial links and managed data network services and use of Internet.
 - Compatible to handle the agreed transmission protocols.
- Data communication networks should be able to handle:
- The Global Telecommunication System (GTS) in its entirety will be part of WIS, especially for meeting real-time exchange requirements.
 - Internet Virtual Private Network (VPN) - Will be an indispensable communication element for the WIS.
 - About 10 lease lines TCP/IP N X 256 kbps circuits for WMO socket /FTP comm.
 - AFTN (Aeronautical Fixed Telecommunications Network) protocol like X400 through TCP/IP, X.25 connection and latest as per ICAO requirements.
 - About 50 FTP, LAN/WAN, VPN circuits
 - Minimum 1 mbps support for full duplex, email exchange, Web upload and FTP.
 - Full duplex mobile communication system for SMS exchange.
 - Each TCP/ IP circuit should support multiple PVCs for files, alpha numeric and binary.
 - The system should support automatic full duplex exchange of files using TCP/IP VSAT based network.

2.2.2 Ethernet LAN (10/100/1000 Mbps) Compliant with IEEE 802.3, 802.4, 802.5. It should provide support for exchanging messages and files over TCP/IP.

2.2.3 All the system including routers, switches, modems etc should be rack mounted. All the Systems should be protected by suitable firewalls.

2.2.4 Tool Kit – 1 Set

- a) Two LAN cable testers and two crimping tools of standard company.
- b) One Tool kit comprising of one flat screw driver set, one star screw driver set, one nose plier, one plier, one wire cutter, one soldering iron, soldering wire and necessary tools for maintenance. All these tools should be compatible with the system/ accessories offered

c) **One digital multi meter.**

- Maximum voltage between any terminal and earth ground- 1000V Display (LCD),
- Battery type - 2 AA, NEDA 15A, IEC LR6
- Battery life - 500 hours minimum (50 hours in LED Test mode without load.
- Fuse protection for current inputs: 440 mA, 1000 V Fast Fuse.
- IP rating: IP 40
- Safety: IEC 61010-1, IEC61010-2-030 CAT III 600 V, CAT II 1000 V, Pollution Degree 2
- Electromagnetic environment: IEC 61326-1: Portable

3.0. GPS Hardware specification:-Quantity- 1 set

- GPS NTP Server for time synchronization.
- Accuracy Ethernet NTP < 50 microseconds UTC typical
- GPS PPS UTC±100 nanoseconds (typical)
- Protocols NTP, NTP v4, NTP v3, NTP v2, SNTP, SNTP v4
- Additional HTTPS (Web), FTP, SSH, Syslog
- Connectivity Ethernet 10/100/1000 Mbit BaseT , RJ45 auto-sensing
- GPS Standard 150m Antenna Connection, but can be extended to 1,000m

4.0. Spare parts

4.1 Hard drive: Qty: 8 (eight) nos.

1.2TB 10K RPM SAS 12Gbps 2.5in Hot-plug Hard Drive as spare for each AMSS.

4.2 LTO-6 or higher Tape Drive compatible with the proposed system: Qty: 10 (ten) nos.

4.3 External Hard drive: Qty: 2(two) nos.

2 TB, USB 3.0 or higher as spare for each AMSS

4.4 Pen Drive: Qty: 4 (four) nos.

Minimum 32GB

4.5 DVD: Qty: 10 (ten) nos.

5. System and Application Software: One set (XML based automatic data switching system) as per hardware configuration (All software should be with lifetime enterprise licence, media, documentation and warranty etc.)

5.1 System Software - All software should be with lifetime enterprise license, media, Documentation and warranty:

5.1.1 Operating system: LINUX (Enterprise server with unlimited user licence).

5.1.2 VM Software : VMware vSphere Essentials Plus Kit

5.1.3 Communication system software:-Communication suite should support (Annexure-IX)

5.1.4 Ethernet LAN, TCP/IP Socket, FTP as per guidelines in Manual on the GTS (WMO No. 386), attachment II-15 and WMO guide on use of FTP and FTP servers at WWW centres and subsequent updates issued by WMO & ICAO from time to time.

- Full networking suite.
- Suitable fail over package.
- IPV4 & IPV6 support ready from day-1.

5.1.4.1 Provision of Hindi in workstation and terminals along with English language.

5.1.4.2 Additional software: Any other software which the supplier may feel necessary to meet the requirement, should be included in the offer.

5.2 Application Software :

5.2.1 XML based automatic data switching system software

5.2.1.1 N X 512 kbps digital circuits (including VPN / VSAT), TCP/IP, protocol ITA-5 code, Email, SMS services and latest industry standard communication protocol.

5.2.2 Alphanumeric and binary messages for routine data collection, exchange and distribution.

5.2.2.1 Compatibility with Traditional Alphanumeric Codes (TAC) and WMO Table Driven Code Formats (GRIB1, GRIB2, BUFR, CREX) message handling.

5.2.2.2 Compatibility with SWIM (System Wide Information Management) (<https://www.icao.int/airnavigation/IMP/Documents/SWIM%20Concept%20V2%20Draft%20with%20DISCLAIMER.pdf>).

5.2.2.3 Exchange of imagery, graphics and binary products in WMO Table Driven Code Formats (GRIB, BUFR, CREX) in real time.

5.2.2.4 Generation of TDCF bulletins from ASCII data as per WMO guidelines. Ingest of all format of RADAR and Satellite data as per WMO file naming convention including data from upcoming RADAR and satellites in future.

5.2.2.5 The system should have the facility to submit and retrieve the messages from remote stations through secured web interface via internet as well as through IMD's MPLS VPN network. The System should have user friendly GUI and Template for submission and retrieval.

5.2.2.6 Conversion of TAC data into TDCF as per WMO guidelines for observational data. The TDCF shall also include WIGOS Station Identifiers (WSI)(to be supplied by IMD) as per WIGOS requirement.

5.2.2.7 Handling & Generation of ICAO messages like METAR, TAF, SPECI etc. in XML/GML format from raw data as per the latest guidelines of ICAO including Amendment 77 to ICAO Annex-3.

5.2.2.8 Conversion of ICAO messages such as METAR, TAF, SPECI etc. into XML/GML format as per the latest guidelines of ICAO including Amendment 77 to ICAO Annex-3.

5.2.2.9 Configuration/modification like WMO/ICAO channels for data streams, headers, database size, sockets, stations, bulletins, bulletin scheduling, various parameters, routing table etc online/offline.

- 5.2.2.10** Sequence number on 3/5 digit checking and automatic request for missing sequences; transmission of messages between time interval and sequence interval.
- 5.2.2.11** Generation of the aviation meteorological bulletins such as ROBEX, VOLMET, Area Forecast etc. to the Air Navigation operators as per WMO/ICAO guidelines including latest updates.
- 5.2.2.12** Provision for manual entry of current weather data to display plain language MET REPORT and to generate coded METAR / SPECI and disseminate automatically as per routing table as well IP based METAR display system. Provision should exist for reporting and displaying prevailing visibility. Plotting of METARs in general and / or any combination of its elements such as Temperature / Dew point, QNH, Visibility etc over a time period ranging from few hours to 30 hrs needed. Software should be capable of generating database for retrieval at any point of time for a period ranging from a few hours to few months for aerodrome climatological database purposes for which the format shall be provided by IMD.
- 5.2.2.13** WMO Meta Data standards support as per WIS and WIGOS.
- 5.2.2.14** Switching of any type of binary files like Word file, text file, Graphic image, spread sheet or data files for transfer of data fields (pre processed observational data), analysis, forecasts amongst WWW centres as per WMO guidelines.
- 5.2.2.15** Ingest of meteorological data (Alpha numeric) through WEB Portal, Email, SMS and other communication devices like handheld data logger etc. and transmission support through Email (with and without attachments)& multiple emails / SMS as the case may be.
- 5.2.2.16** Provision for validation of all data received as per WMO/ICAO guidelines. Provision should exist for pop-up error messages then and there for inconsistent data entries and also at the end before submission of data into the system.
- 5.2.2.17** Provision of SADIS (Satellite Distribution System) data reception, processing and switching
- 5.2.2.18** Facility to download for all type of operational data from World Area Forecast Centre (WAFC) London/ WAFC Washington by secured SADIS FTP every 6 hourly regularly to generate the product for aviation i.e. wind –temp chart, sig weather chart, harmonised products etc. for all level and places.
- 5.2.2.19** System should be user friendly in respect of carrying out the desired configuration, compilation and installation for implementation of additions and modifications etc whenever required by WMO/ICAO/customer/local Offices.
- 5.2.2.20** Provision for implementation of digital conversion and exchange of OPMET information like METAR, SPECI, TAF and SIGMET, Volcanic Ash Advisory (VAA), Tropical Cyclone Advisory (TCA) and AIRMET using the IWXXM format.
- 5.2.2.21** Implementation of first simple (fast track) amendment to the Manual on GTS which adds data designators for use in GTS Abbreviated Headers to allow more aviation information (OPMET) to be identified when it is not in Traditional Alphanumeric Code Form. The information will be in IWXXMM XML/GML format.
- 5.2.2.22** Implementation of new METAR and TAF collectives for the United States, for International Distribution, effective from November 30, 2016 as per FAA requirements that all US METARs used by international carriers must contain the remarks section of the METAR. Additionally the United States will now include all U.S. TAFs and their associated METARs as per the request from the International Airline and Transportation Association (IATA).

- 5.2.2.23** Exchange of seismic data, GMDSS data and disaster warnings like Tsunami and nuclear accident data, Tropical Cyclone Advisory bulletin etc (through specific communication interfaces and following specific switching requirements and handling different formats e.g. Text file).
- 5.2.2.24** Provision to delete the duplicate data received in the switching server.
- 5.2.2.25** Preparation of Aerodrome Met Summary data base in a prescribed format (to be provided by IMD) based on current weather data input by the system operator on a day-to-day basis and retrievable in the native format (to be provided by IMD - usually 80 column matrix with rows as dates and columns as Met parameters and date/time/station ID. etc) on a monthly basis (at the end of every month) or for any period selected by the operator for answering queries and be stored in separate folder date wise.
- 5.2.2.26** System should have user friendly GUI Tools for system administration and day to day monitoring of data RX&TX, system efficiency, circuits status, remote node status etc.
- 5.2.2.27** All the system should synchronise their time using GPS NTP server.
- 5.2.2.28** Changeover from Live to standby system should be instantaneous and automatic as well as manual (in case of a need) without any loss of data.
- 5.2.2.29** Provision of MIS (Management Information System) for fault reporting, alarm generation, updating, tracking, preparation of periodical reports (fortnightly / monthly / quarterly) etc to be customised during implementation as per user requirement.
- 5.2.2.30** Ingest of all data types (WMO/ NON-WMO/ ICAO standard) including RADAR, Satellite, Agro meteorological, Hydrological, Seismological and other weather related data etc. received through any mode of communication channels (i.e. socket, FTP, Email, SMS etc as per WMO/ICAO agreed means of communication).
- 5.2.2.31** Interpretation, routing and display of GRIB2, XML/GML, T4 and BUFR information received via SADIS or GTS.
- 5.2.2.32** Strict Validation of all data received as per WMO/ICAO provision.
- 5.2.2.33** Integration of OLBS with XML based automatic data switching system. Script facility to download and ingest using secured FTP service for all type of operational data from the WAFC's as per the requirement.
- 5.2.2.34** Provision of storing the operational data for a period of 24 hrs in cache. It should also be able to update its own database from the other AMSS/ data switching systems databases in case of non-reception of data due to technical problems.

5.3 WMO Procedures - The system should support the following features:-

- 5.3.1** Switching delay should not be more than 50 milliseconds.
- 5.3.2** Maximum length should be as per WMO standard. However, provision for “user selectable” option may be made available.
- 5.3.3** Implementation of any changes i.e. configuration in the XML based data switching system Application software (addition, deletion, modification etc.) should be well documented so as to carry out the aforesaid changes by system administrator without any complications.

5.4 DATABASE AND QUERY MANAGEMENT

- 5.4.1** It should store the messages according to message types in coded formats.

5.4.2 It should support retrieval from database via following elections:

- a. By input/output sequence number or range of seq. nos. on a channel.
- b. By TT group (headers), CCCC group as well as YYGGgg group for WMO messages.
- c. By 'wild card'.
- d. By Station Index numbers and date, time.
- e. The system should have the facility to submit and retrieve the messages from remote stations through secured web interface via internet as well as through MPLS VPN network.
- f. Retrieval and transmission of WMO/ICAO messages as per remote request received from a circuit based on output sequence number or abbreviated header with wild cards as per WMO/ICAO standard.

5.5 QUEUE MANAGEMENT:

5.5.1 To reduce disk I/O, the transmission queue preferably should be memory based. In case of system failure, the queuing function should restart exactly from the point at which it was executing just before the failure. The messages which were being transmitted at the time of failure should be retransmitted from the beginning of the message. There should not be any loss of data either at the receiving or at the transmitting end.

5.5.2 It should provide prioritized queue management system.

5.5.3 Provision of queues for different types of data like alphanumeric/binary/XML/GML etc. on different types of circuits and their separate handling should be possible.

5.5.4 It should be possible to alternate route messages from one queue to another queue on demand.

5.5.5 It should be possible to divert messages from lower priority to higher priority in the same queue.

5.5.6 It should be possible to purge one or more selected messages from a queue on the basis of TTAA, CCCC or YYGGgg or combination of these.

5.6 MONITORING AND USER INTERFACE MODULE: It should support following features using standard web browsers:

5.6.1 Graphical User Interface for the operator/ system administrator interface for performing 24 X 7 operational and system administration functions.

5.6.2 Generation of statistics in respect of number of messages, characters received and transmitted hourly as well as for last 24 hours in respect of selected channel.

5.6.3 Availability of current hour status of a selected channel in respect of number of received, transmitted and pending messages together with open/close status of the channel.

5.6.4 Closing & opening of a selected channel by operator through GUI button.

5.6.5 Facilities for addition and deletion of communication circuits, queues, bulletins, entries in various parameter tables and the routing directories relating to switching of messages & bulletin generation through GUI control windows.

5.6.6 User assisted correction of messages which have been declared invalid by the validation programme through GUI edit windows.

5.6.7 Extensive menu based help on the various aspects of the message switching systems.

5.6.8 Facility to generate bulletins on the basis of the templates entered at the user interface manually.

5.6.9 It should be possible to check/ search the reception of the national/global data for various data types on the basis of station index numbers on a background map.

5.6.10 Provision of monitoring of all types of bulletins i.e.: The bulletins, messages, number of stations transmitted and received for a particular time span and some other reports as per user requirement during customization.

5.6.11 Generation of request for missing data automatically on the basis of predefined message templates containing stations list or header and send it to appropriate centers which are also defined in the template.

5.6.12 Facility to archive the data of each day/week/month. It should also be possible to take retrieval from archived data.

5.6.13 Software module should be designed in such a manner that the database can accommodate any future changes (as advised by WMO/ICAO from time to time).

5.6.14 Facility should exist for creating transfer files having user selectable data types and time window from the bulletin database and report database and transfer those files to the remote nodes at user defined regular intervals using FTP, TCP/IP Socket etc.

5.6.15 Similarly files which are transmitted by remote node to the data switching system containing messages should be automatically made available to the switching programme for switching to various destination queues after validation.

5.6.16 Facilities for quick look of the graphic products, charts and documents on the workstation should be also provided.

5.6.17 System should be able to generate real time reports of types of bulletins, station wise reports with date, time from data base in user friendly formats (which may be finalized at the time of implementation).

5.6.18 System should be able to generate metadata of all types of data as per WMO format which is the requirement of WIS and WIGOS.

5.6.19 There should be a 'system backup and restoration' module for all the systems (XML based data switching system & OLBS) and associated peripherals running on various operating systems and applications through which one should be able to take the entire system backup on a media like DVD (e.g. ISO image backup of the system) and tape cartridge etc. With the help of this backup, one should be able to restore the system, in case of corruption or failure of the system. The facility is to be demonstrated at the time of SAT.

5.7 DATA BASE Server software:

The data base server software is to be implemented in the data Switching Systems. Data base system should have the facility for the reception, decoding, processing, displaying different types of products, such as NWP, Satellite and Radar, graphics etc. The system should be able to handle Alphanumeric, XML, GML, GRIB, BUFR, CREX, Satellite and Radar data etc. Facility for storage of all metadata as per WMO and ICAO guidelines, routing tables, WMO monitoring, various code table etc. Metadata pool is required to be designed based on WMO WIS and WIGOS metadata standard of including latest standards/version and formats. There should be Web based interface to access the database as well as to supply data and management system.

5.8 Control and monitoring Unit:

The following graphical user interface (GUI) based monitoring facilities may be provided preferably using the standard web.

5.8.1 There should be facilities to monitor and generate continuous visual reports for the operational status of all the Servers, Disk storage subsystems and all the associated communication devices and peripherals. In case of any failure, in the above Servers and peripherals, it should alert the operator by event alarm/ light indicator and email along with the special report on the printer (if print required). For maintenance purposes there should be facility to disable the visual/audio alarms. This disabling facility should be available software-wise to the system manager only.

5.8.2 The system should monitor the condition of communication lines and number of messages pending for transmission on communication lines. If any failure is detected in the transmission of data, it should be immediately reported in the form of alarms. The concerned log information should also be stored for the last thirty days (minimum) with configurable option.

5.8.3 Operational software should provide facilities to collect and generate all relevant system performance parameters such as maximum switching delay, queue backlog, CPU utilization, I/O on communication channels and I/O on disk storage, disk occupancy, resources (such as CPU time and memory) utilization by different software modules. These details and other critical information should be also written to a log file.

5.8.4 All the monitoring facilities mentioned above serving operational requirements should have database interface to generate pseudo color based graphic display facility on real time basis or for non real time statistics.

5.9 GUI based user interface software module preferably using the standard web browser. User interface software module should be based on user friendly graphical user interface and it should provide the following features:

5.9.1 Facility to generate bulletins on the basis of the templates entered at the user interface manually.

5.9.2 Facility to submit and retrieve the message via LAN and WAN.

5.9.3 Provision of computer-assisted correction of messages, which have been declared invalid by the validation programme.

5.9.4 Provision of correction on the basis of various data types and also on the basis of data coming on particular channel.

5.9.5 Facility to generate bulletins on the basis of the templates entered at the user interface manually.

5.9.6 Checking the reception of the national /global data for various data types on the basis of station index numbers, latitude/ longitude range. The user interface module should also support the graphic display for messages which are having latitude /longitude embodied in the messages like AIREP, SHIP messages, AMDAR, DRIBU etc.

5.9.7 Detailed operational, maintenance and system administration manuals containing various procedures and commands required by the operators, maintenance personnel and system administrators in connection with day-to-day operation should be provided along with the system (hard bound copies & soft copies- each two sets).

5.10 Security

5.10.1 Only traffic authorized to flow within National circuits should be allowed through suitable rules.

5.10.2 Intrusion detection, prevention and elimination software should be provided. Specifications of suitable hardware required, should be suggested.

5.10.3 Provision of Email scanning in respect of content & virus and necessary actions like quarantine or healing.

5.10.4 All the security provisions should be in conformity with WMO and ICAO Guide lines on Information Technology Security (ITS) at WWW& aviation weather services centers.

5.10.5 The firewall equipment must be in Leader for Gartner Magic quadrant for firewall for last two consecutive years.

5.11 WMO/AFTN Procedures: The system should support the following features:

5.11.1 Message header analysis, message routing and service message handling in accordance with WMO Publication 386 for WMO message and header analysis, routing, service message generation and handling of incoming service message and other functions in accordance with ICAO Annex 10 including latest Amendment 77 & 78 to ICAO Annex-3 and various Documents including updates received from WMO and ICAO from time to time.

5.11.2 The XML based data switching system should function as a WMO as well as an AFTN switch to support WMO and AFTN channels. Switching and routing of locally generated meteorological messages on AFTN based on the type of message, time duration, and day of the week to a no. of pre-defined stations/channels in ICAO format.

5.11.3 Provision for generation of Pre-flight Information Bulletins (PIBs).

5.11.4 The system should be capable of handling messages generated under **IWXXM and AFTN Message Handling System.**

5.11.5 The system should be capable of handling the digital format for volcanic ash and tropical cyclone advisories and AIRMET information and the provision of METAR/SPECI, TAF and SIGMET.

5.11.6 There should also be a GUI based arrangement to delete data of predefined duration / empty data from the database. This will be important at the time of taking backup to reduce the size of the backup files.

5.11.7 The AMSS will transmit to and receive AFTN messages from AAI AMSS. The vendor has to analyze the AFTN channel of AAI and configure the AFTN channel of AMSS, so that there is seamless data communication between IMD AMSS and AAI AMSS.

5.11.8 The vendor should provide serial and socket communication facilities as per the existing setup of AAI AMSS at the place of AMSS installation.

5.11.9 There should be GUI for AFTN message configuration i.e. setting up of priorities, source and destination AFTN addresses etc. There should be provision for manual transmission of AFTN messages with user defined priorities, source and destination AFTN addresses etc.

5.11.10 The FTP service should be separate for every FTP channels i.e. if FTP service for one channel is stopped then the FTP services for the other channels should continue.

5.11.11 There should be a web based dashboard with channel (configurable) incoming and outgoing status, vital system parameters like vacant space in hard disks, CPU usage, RAM usages, system temperature, live and standby system, etc. with auto refresh facility.

5.11.12 There should be separate VLAN for Servers and DMZ for Web and Email Servers. Communication of servers with operator terminals and other PCs in LAN should be through Firewall with predefined rules.

5.11.13 There should be dedicated heartbeat network among the servers for implementation of hot standby mode among the servers.

5.11.14 All the aviation / OPMET message transmission and bulletin generation are guided by ROBEX Handbook. The system should comply the latest ROBEX Handbook. The ROBEX Handbook can be downloaded from

https://www.icao.int/APAC/Documents/edocs/robex2004_e12.pdf.

5.11.15 The system should have arrangement for SIGMET Test message with predefined AFTN addresses and priority as per the latest Regional SIGMET Guide for Asia Pacific. The Regional SIGMET Guide for Asia Pacific can be downloaded from <https://www.icao.int/APAC/Documents/edocs/APAC%20Regional%20SIGMET%20Guide%206th%20edition%20May%202017.pdf> or soft copy can be taken from ISSD. The SIGMET message transmission and reception should also comply latest the Regional SIGMET Guide for Asia Pacific.

5.12 METAR DISPLAY Software:

Provision for display of MET REPORT, METAR and Aerodrome warning to all the proposed IP based METAR DISPLAY TV.

6. Automated Pre-Flight Information Systems for Briefing, Consultation, Flight Planning and Flight Documentation an (OLBS) as per ICAO Annex 3 should have the followings facilities/ features:

6.1 Web portal based on A-P-M (Apache – Php – MySQL) or any latest available software.

6.2 Automatic updating of required data and products from XML based automatic data switching system available at the site.

6.3 Compliant to UNIX or Linux operating system.

6.4 Providing continuous and timely updating of the system database and monitoring of the validity and integrity of the meteorological information stored.

6.5 Permitting access to the system by operators and flight crew members and also by other aeronautical users concerned through suitable telecommunications means.

- 6.6** Access and interrogation procedures based on abbreviated plain language and, as appropriate, ICAO location indicators, and aeronautical meteorological code data-type designators prescribed by ICAO, or based on a menu-driven user interface, or other appropriate mechanisms.
- 6.7** Provide rapid response to a user's request for information.
- 6.8** Home page should consist of Static and Dynamic pages.
- 6.9** METAR / SPECI shall be displayed ICAO abbreviated station name-wise as well as flight information region (FIR)-wise by accepting input entries for station names such as VABB, OPKC, VEGT, EGLL etc wild card for all airports in any FIR such as VA*, VO*, VE*, VI*, O*, E*, Z* etc.
- 6.10** Retrieval of flight information shall be menu based so that user is able to select the required products.
- 6.11** The system shall take input from the user based on flight No., call sign, route, ETD, name and designation etc. and validate the same with the database for authentication.
- 6.12** Provision of submitting request for briefing for non scheduled flights shall be available by taking inputs such as call sign, route, ETD, name and designation etc from the user.
- 6.13** It shall provide audio – visual alarms for any of the wrong entries by the users and guide the user to feed correct entries.
- 6.14** It shall display all aviation weather data / information i.e. should have a data/products catalogue which the system generates.
- 6.15** Web portal should have facility to link IMD HQ web site and web sites of other IMD airport meteorological offices with configurable option.
- 6.16** It shall provide links to other specific information of AMO Chennai / Delhi, AMO Mumbai and Kolkata, as the case may be, for updating of dynamic pages.
- 6.17** It shall maintain the log entries of all login details of the users and the products downloaded by the users (airline-wise /operator-wise).
- 6.18** Six months storage as per storage policy with configurable option to increase or decrease the storage period for flight information data to be kept on server with backed up facility on removable/portable media. The data should automatically be overwritten after a period of one year or as the case may be.
- 6.19** At the end of the login session, the authentic user should be given a briefing certificate with flight details and products downloaded by him and such a certificate shall also be archived in a specific folder meant for that particular airline / non-scheduled operator / airport operator concerned. These folders containing certificates shall also be archived for a period of 6 months along with data downloaded as stated above.
- 6.20** Provision shall be made to download the climatological information of any airport in India without any authentication of the user.
- 6.21** The proposed OLBS shall fetch all required data automatically from XML based data switching system/ AMSS/ ftp servers of IMD.
- 6.22** Bidder may familiarize himself with the existing OLBS in IMD to have an idea about the requirement.
- 6.23** Provision for Local and area forecasts for an airport and 100 NM around the airport.

- 6.24** Provision for Terminal Aerodrome Forecasts (TAF) of all national and international airports individually as well as in composite (bulletin) form to cover areas of interest such as east bound flights, west bound flights etc in a single bulletin or a number of bulletins if required.
- 6.25** Accepting queries for a limited number of METAR/SPECIs and TAFs of any chosen of all national and international airports and display the required information instead of a lengthy bulletin.
- 6.26** Provision for generation of ROFOR for scheduled and non-scheduled flights.
- 6.27** Provision for display of Satellite images, Doppler Weather Radar products and regional weather inferences
- 6.28** Provision for Static pages indicating the climatological information of the airports, Organization details of IMD, contact details of the Met offices in the Flight Information Regions (FIR) concerned etc.
- 6.29** Provision for FAQ
- 6.30** Provision for Management and monitoring facility for the administrators with graphical user interface (GUI).
- 6.31** Menu driven provision for users to enter flight details, flight route and ETD etc and validation of such entries.
- 6.32** Provision for keeping a record of the details entered by the users and the products downloaded by them with date and time stamps.
- 6.33** Provision for generation of reports for the login and access details of the users on daily, weekly and monthly basis and also on query at any point of time to prepare the summary for any period chosen by the user interactively.
- 6.34** Provision for Aerodrome warnings and SIGMETs.
- 6.35** Provision for bulletin generation from OPMET messages and data.
- 6.36** Generation of reports for the login and access details of the users on daily, weekly and monthly basis and also on query at any point of time to prepare the summary.
- 6.37** The system should have the capability to submit WMO /ICAO met message by remotely log in through internet as well as MPLS VPN.
- 6.38** Provision for generation of significant weather and Wind-Temp charts for different flight level from the OPMET data received from WAFCS.
- 6.39** Provision for generation of different charts from Synoptic database such as Surface Charts and Upper Air Charts etc.
- 6.40** Provision for uploading/generating ARFOR/ROFOR in T3/T4 format in OLBS (similar to Local/ area forecasts) of airports.
- 6.41** Provision for uploading local product by any airport stations such FOG forecast, Low Visibility procedures and warning (other than aerodrome warning) as per user requirements in OLBS.
- 6.42** Provision for correction due to typographical errors at station level in METAR, warnings and forecasts etc.

6.43 Provision for generation of T-phigram along with various stability indices etc. from the surface and upper air data (latest as well as old data). Also to support auto/manual analysis of various weather parameters with edits facility of these charts wherever necessary if possible.

6.44 Software configuration for storing the Aviation Meteorological data like METAR, TAF, Wind/Temp Charts, SIGWX, warning etc in OLBS for a period of 6 months.

6.45 The system should be capable of generating weather parameters (like wind temperature, turbulence echo top) along the selected air corridor from the WAFC data.

6.46 The system should have tools for generating Graphical SIGMET.

6.47 Provision for retrieval of information like log activities, data and document downloaded by the individual user (airlines operator) with time stamp in case of accident occurrence and accident enquiry. The provision should be there for regeneration of the document/ data downloaded by the user from the original data base.

6.48 Provision for submission of debriefing report by the registered users (i.e. from Pilot/ operator) by either logging to the OLBS or through web, E-mail, WhatsApp. Bidder shall also make the provision for downloadable Mobile apps for this purpose.

7. Requirements for presentations and references:

Bidders must confirm that they are prepared to attend a meeting with IMD officials in two week's notice, at their own cost, if IMD requires presentations/ any clarification of their tendered solution.

8. Factory Acceptance Testing (FAT):

There will be Factory acceptance test at OSC site for software suites and SI/ OEM site for hardware items. The purchaser/consignee will inspect the deliverables before their dispatch.

The supplier shall submit detailed test plans for Factory Acceptance Testing (FAT) along with detailed 'System administrators' training syllabus for its finalization prior to shipment of the system. As per the mutually agreed test procedures, FAT shall be carried out at the supplier's premises prior to shipment. The equipment shall be shipped only after satisfactory conclusion of the pre-shipment acceptance testing (FAT).

9. Delivery terms, Schedule and Installation:

9.1 Delivery terms:

- a) **In case of domestic bidder:** All the items are required to be delivered directly at respective sites viz. Kolkata, New Delhi, Mumbai and Chennai airport, India.
- b) **In case of foreign bidder:** Dispatch of items on F.O.B value basis, if applicable. Items shall be handed over to the bidder after custom clearance, if applicable, by IMD for onward delivery of stores at respective sites by the bidder. Inland local transportation of stores in India is the responsibility of the bidder.

9.2 Delivery Schedule:

- a) **In case of domestic bidder:** FAT shall be completed within two months from the date of supply order subject to submission of acceptance letter and required bank guarantee by the bidder in response to the supply order. The bidder is required to complete all the delivery of hardware and software suites within one (1) month from the date of completion of FAT.
- b) **In case of foreign bidder:** FAT shall be completed within two months from the date of opening of LC. The **LC will be opened after** submission of acceptance letter and required bank guarantee by the bidder in response to the supply order. The bidder is required to complete all the delivery of hardware and software suites within one (1) month from the date of completion of FAT.

9.3 Installation

All the Systems shall be installed within six (6) months from the date of final delivery of systems (hardware and software suites) at the site (in case of indigenous bidder).

Or

All the Systems shall be installed within six (6) months from the delivery date of system (hardware and software suites) and handing over to the bidder after custom clearance (if applicable) by IMD (in case of foreign bidder).

10. Site Acceptance Test (SAT):

The Bidder should take note of the rigorous standards of the tests, which must be met by the equipment before IMD will accept it. In essence, the acceptance tests are as follows:

After completion of the installation the bidder shall inform the consignee for acceptance of the system at the site. The bidder shall submit an acceptance test procedures (ATP) well in advance. IMD will participate in the installation and the configuration of the system software etc. together with the successful Bidder's Project Management Team and will be responsible for maintaining the system configuration etc. once the installation is completed. Bidders should take note of the rigorous standards of the tests, which must be met by the system before IMD will accept it. In essence, the tentative acceptance tests are as follows:

- After completion of the installation, a functional test period will start on an agreed date and mutually agreed test procedure at site. The test will last for **seven (7)** working days and will consist of the periodic running of various diagnostic, checkout, demonstration and test routines. The purpose of the test is to establish that the equipment is functional, and that various aspects of its performance and behavior are in accordance with the published specifications as per the tender document and the Contract.

- **Backup and restoration:**

The vendor should demonstrate step by step Backup and restoration of full system to IMD officers during the Site Acceptance Test both from media and other source. An ISO image type backup of entire switching system including OLBS is also to be carried out and

restoration of the system through the same to be demonstrated during the SAT. IMD officers shall verify the same before commissioning of the system.

- a. The bidder should take the backup in DVD during SAT. The bidder should restore the backup from DVD in the blank hard driver after removing the operational hard drive.
- b. The bidder should take backup in LTO-6 or higher Tape Drive. This LTO Tape drive should be connected with each Server and all the associated driver software and configuration has to be provided. The bidder has to provide 10 cartridges compatible with the LTO-6 or higher Tape Drive.
- c. The bidder has to provide DVD of OS so that the Server can be formatted and OS can be installed.
- d. The backup of virtual servers should be taken in external HDD. The driver software for the external HDD has to be installed in the server.
- e. The arrangement should be made to backup/restore the database in/from Pen Drive / External HDD for user defined duration / days through GUI.
- f. The arrangement should be made to delete data of predefined duration / empty data from the database through GUI.

▪ **Reliability test**

Following the functional test, a reliability test **period of 10 (ten)** days of uninterrupted operation of the system is required. During this period, no failure that affects the full functionality of the system as per requirements should occur. Failing this the reliability test cycle will be repeated. The system shall be commissioned only after successful completion of reliability test and training as per details given in the next Para.

11. Training

Bidders must include the cost with a detailed proposal for training for system administrators for **ten (10) officers** for a period of **four (4) weeks** with sufficient understanding of the internal working of the offered system & application software, system administration and maintenance and operations of the system at OEM and OSC site by bidder to enable them to provide effective day-to-day and emergency support.

The cost of travel, accommodation and per-diem for all the officers will be borne by the Govt. of India.

Bidders should submit detailed programme of training with course details like Application software, XML, GML, Python, Perl, Cent OS and LINUX etc. The syllabus of the proposed training shall be submitted with the bid. The details of the topics to be covered during the training shall be finalized and approved by the consignee.

The bidder is also required to arrange operational training of the system at respective system site to operators **for ten (10) working days** after the installation and commissioning of the system at sites.

The bidder shall submit the cost and syllabus of operational training along with the bid.

12. Documentation

Bidders must provide self contained documentation and manuals for the configuration, system administration, operation, and in-house maintenance like system backup & recovery etc in hard bound copies (two sets-each site) and in printable electronic form (preferably in PDF and word format in CD/DVD). Such material must be made available prior to installation and updates must be provided for the duration of this Contract.

Bidders shall also make provision for availability through on-line access to such material via an appropriate Web Site or FTP site.

13. Compliance/Non-compliance statement:

To facilitate quick evaluation of the proposals, the bidders should submit in a tabular form, a detailed compliance/non-compliance statement pertaining to each Para and sub-Para of this RFP as per **Annexure-VII**. The technical specifications and other requirements contained in the RFP are essentially required to be met fully by the bidders. Reasons for non-compliance, if any; may also be given in detail. Details/Supporting documents for compliance, wherever required may also be provided.

The bidder is required to submit un-priced list of deliverables in tabular form along with technical offer.

14. WARRANTY

- a. After satisfactory completion of the system commissioning and site acceptance tests (SAT) on-site, the supplier shall provide comprehensive warranty support for the overall system for a period of three (3) years.
- b. Warranty shall be for full hardware, software and networking system and at the same level of operational efficiency and service support. Replacement/repair of defective hardware shall be done free of cost.
- c. The bidder shall provide comprehensive warranty with technical support round the clock (24x7x365) to address, analyze and fix any technical glitches within the existing features. The scope of technical support includes rectification/debugging of errors present within the entire software and hardware.
- d. All the charges towards transportation and custom duty export/re-import of defective software and hardware shall be borne by bidder. Any software modification, updates, antivirus and software licenses renewal etc shall also be done by bidder without any financial obligation on IMD.
- e. The bidder is required to have service centre in India preferably at all the four AMSS sites r/and secured remote maintenance facility permitted to OEM/OSC through internet.
- f. Tender shall include year wise quote for three (3) years standard warranty, the cost of which will be considered for evaluation and determination for **lowest offer (L1)**.
- g. During the period of warranty, the bidder should associate IMD officials with his own engineers who will make available the full details of servicing done on the system to the IMD officials.
- h. The bidder should be ready to accommodate marginal changes in order to fulfil such requirements that may arise as per WMO/ICAO requirement during the intervening period

between preparation of this document and commissioning and operation of the system including three years warranty period after the Site Acceptance Tests.

15. Comprehensive Annual Maintenance Contract (CAMC):

The entire system shall be under Comprehensive Annual Maintenance Contract (CAMC) for Five (5) years after expiry of normal warranty period. The bidder has to sign an agreement with IMD for the CAMC. The terms & conditions during CAMC period shall be as follows:

- a. Initially CAMC shall be awarded for two years and same will be extended further on yearly basis provided the services of the bidder are found satisfactory.
- b. The CAMC shall be extendable further after completion of 5 years on the same terms and conditions on yearly basis depending upon the satisfactory service provided by the bidder during the contract period after approval of the competent authority.
- c. In case of such extension, the lowest CAMC price quoted out of the CAMC price for five years shall be considered as the CAMC price for the entire extended CAMC period.
- d. The CAMC shall be for full hardware, software, licenses, updates & upgrades and networking support at the same level of operational efficiency and service.
- e. The bidder shall provide comprehensive AMC with technical support round the clock (24x7x365) to address, analyze and fix any technical glitches within the existing features. The scope of technical support includes rectification/debugging of errors present within the entire software and hardware.
- f. Break up of year wise cost towards CAMC period shall be mentioned in price bid. Payment shall be released towards this on quarterly basis after completion of period subject to satisfactory performance.
- g. All the charges towards transportation and custom duty export/re-import of defective store shall be borne by bidder. Any hardware replacement and software modification/updates/antivirus software/ software licenses renewal etc shall also be done by the bidder without any financial obligation on IMD.
- h. Tender shall include year wise quote for five (5) years comprehensive AMC, the cost of which will be considered for evaluation and determination **for lowest offer (L1)**.
- i. During the period of CAMC of the system, the bidder should associate IMD officials with his own engineers who will make available the full details of servicing done on the system to the IMD officials.
- j. The bidder should be ready to accommodate changes in software suites in order to fulfil such requirements that may arise as per WMO/ICAO requirement during CAMC period after warranty.

Note: Bidder should provide the web based help desk facility for fault booking and rectification besides contact details like phone number, mobile number and email addresses with escalation matrix round the clock during entire Warranty and CAMC period.

16. Service Window

The bidder will provide one resident engineer at **each site** during Warranty and CAMC period. They should have at-least 2 years work experience and should be available on all

the days from 1000 hrs to 1800hrs (Monday to Friday), even after 1800hrs and holidays in case of emergency without any extra payment. The engineers should be equipped with mobile phones to ensure their availability.

- a. The bidder has to submit the list of engineers likely to be deployed at IMD site with their qualification, experience and contact details. The bidder has to update the same immediately on change so that fresh entry pass can be issued by IMD on return of the existing pass.
- b. If a service Engineer remains absent or on leave without providing substitute, the warranty and CAMC period shall be extended by double of the period of absence per engineer.

If an engineer is not found suitable in technical knowledge or by his behavior while dealing with officials, firm would be bound to replace him/her immediately on presenting a report by IMD.

Service Window: The Service Window for onsite warranty and CAMC support at IMD is required as under:

Location	Days	Service Timings	Mode of Delivery
IMD office at AMO New Delhi, Kolkata, Mumbai and Chennai	Monday to Friday including holidays	Office hours (1000 to 1800 hrs)	Resident Engineer
-DO-	All days	Beyond office hours including holidays	Engineer on call

17. Terms and Conditions:

- a. For software and hardware as per technical specification, bidder must have back-to-back support with OEM and OSC for meeting all the contractual obligations for entire period of contract (including warranty & CAMC) and to be submitted along with the technical bid.
- b. XML based automatic data switching system Application software and OLBS software supplied should be of latest version with all updates as per WMO&ICAO guidelines along with media, manuals and requisite licenses.
- c. The successful bidder will provide operational and maintenance manuals, set of diagnostics to test all the system/sub-systems etc.
- d. The bidder has to give an undertaking that it will not use IMD data for any other purposes including commercial. If the bidder uses the IMD data for any other purposes including commercial the purchaser reserves the right to terminate the contract at any time, by serving written notice to the Bidder without any compensation.
- e. The bidder should take regular monthly backups of all the software (O.S. and Application software for all devices) during warranty and CAMC period and keep the same at system

- site. The bidder is also required to restore the existing Software from the Backups whenever required.
- f. The bidder will be responsible for configuring the networking components like Routers, switches, firewalls etc. during warranty and CAMC period.
 - g. The Director General of Meteorology also reserves the right to accept or reject any or all the bids without assigning any reason.
 - h. Bidders are required to quote in format given in tender document.

18. Payment Clause:

(i) For Foreign bidder:

- a. 40% payment of the total quoted of the hardware and software price shall be made through LC on proof of despatch of complete system by the foreign bidder.
- b. Payment of the balance amount i.e. 60% of the total quoted hardware and software and 100% charges of the services price shall be made only after installation, configuration of the whole system and successful commissioning of the system.

(ii) For Indian Bidder:

- (a) 40% payment of the total quoted of the hardware and software price shall be made on receipt of the item at IMD site and followed by inspection.
- (b) Payment of the balance amount i.e. 60% of the total quoted hardware and software and 100% charges of the services price shall be made only after installation, configuration of the whole system and commissioning of the system.

(iii) The Payment of CAMC: The bill towards payment of CAMC charges shall be raised quarterly. Payment shall be released on quarterly basis after deducting penalty amount, if applicable and TDS etc. on the submission of certificate of satisfactory services during the period by ISSD, O/o Director General of Meteorology, based on reports from station.

19. Penalty Clauses during Warranty and CAMC.

- a. If there is complete failure of operations for more than four hours to 24 hours due to failure of any system/subsystem then the warranty/CAMC period will be extended for 2 days.
- b. If the complete failure duration extends beyond 24 hours up to 2 days then warranty/CAMC period will be extended by 5 days.
- c. If the above failure duration extends beyond 2 days up to 7days or part of the day, the warranty/CAMC period will be extended by three times the number of days of failure in addition to the duration mentioned under point **19 b** above.
- d. After 7 days IMD is free to take decision for next course of action such as fault resolution from any alternate source. CAMC etc. The cost incurred on such fault resolution shall be recovered from the bidder and proportionate payment of Warranty/CAMC charges shall be deducted from bank guaranty/CAMC payment
- e. For the purpose of penalty clause implementation, the time of failure period for repair will be counted after 2 hours from the time of reporting of fault.

20. List of Deliverables

Bidders shall have to propose a turnkey solution to the project as per requirement of RFP. The bidder shall have to provide list of all hardware, Software and other equipments (along with their make, model and other relevant details) required under the Scope of work of the project. Proposed lists of deliverables are given under **Annexure-VIII**. The list is suggestive. The bidder may propose additional item required, if any, to fulfil the requirement of Scope of work. List of deliverables submitted in Technical bid must be same as mentioned in financial bid except the pricing. Financial bid will be ignored and not considered for further evaluation if any deviation found.

21. Pre-bid meeting

Any clarification required shall be discussed and clarified during the pre-bid meeting which will be held in ISS Division.

Prospective bidders may send their queries to be discussed during pre-bid meeting at least 5 days in advance to Sh. Sankar Nath Sc-‘E’ at email address sankar.nath@imd.gov.in and Dr. S. L. Singh DDGM (ISSD) at email address sl.singh@imd.gov.in .

SECTION – VII
GENERAL CONDITIONS OF CONTRACT (GCC)

1. **General – I: Bidders shall have to agree/accept all the terms and conditions of the tender document including payment terms etc. Acceptance shall be unconditional and bidders shall have no claim and right in future on their terms if any.**
2. **General – II:** Whenever there is any conflict between the provisions in the GCC **regards to specific Para under this section and that in the “RFP” “List of requirements/Technical Specifications”**, the provision contained in the RFP (Technical Specifications) shall prevail and have an over-riding effect. Any Special instructions as per “RFP-List of requirements/technical specifications” section will also apply for this services/purchase. The conditions (like qualification criteria, delivery schedule, mode of delivery & sites of delivery etc.) mentioned in “RFP-List of requirements/ technical specifications section” will also apply for this purchase.

3. Tender Validity:

The bids shall remain valid for acceptance for a period of **180 days (one hundred eighty days)** after the date of tender opening prescribed in the TE document.

4. Purchaser’s Right to accept any tender and to reject any or all bids:

The purchaser reserves the right to accept in part or in full any tender or reject any tender without assigning any reason or to cancel the tendering process and reject all bids at any time prior to award of contract, without incurring any liability, whatsoever to the affected bidder or bidders.

5. Tender Fee: No tender fee is charged on the downloaded and e-tenders.

6. Purchase /Price preference:

6.1 Purchase preference shall be given to **Make in India**, as per the policy of Government of India to encourage Make in India and promote manufacturing and production of goods and services in India circulated Vide Order No. P-45021/2/2017-B.E.-II, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion dated. 15.06.2017.

6.2 Price preference shall be given to **Micro and Small Industries** registered for stores and services specified in this tender enquiry document with **National Small Industries Corporation** or any other government agencies as per the latest guidelines/orders from Government of India as on date of submission of bids. Purchase preference and quantity etc. shall be decided as per the Government of India orders. The bidders shall have to attach valid registration certificate. Micro and small Enterprises are exempted for submitting of earnest money deposit (EMD) also known as security deposit. However Micro and small Enterprises are not exempted from performance security. Micro and small Enterprises shall have to furnish performance security if purchase order is placed to them. There is no relaxation in this regard.

7. Earnest Money Deposit (EMD):

The bidder shall furnish earnest money **Rs. 4400000/-**(Forty Four Lakhs Only) along with its tender, for an amount as shown in the tender notice. The earnest money is required to protect the purchaser against the risk of the bidder's unwarranted conduct.

The bidders who are registered on Tender submission date with National Small Industries Corporation, New Delhi, shall be eligible for exemption from EMD. Micro and small Enterprises specified by Ministry of Micro, Small & Medium Enterprises (MoMSME) **are exempted from Earnest Money Deposit (EMD)**, who produce goods or provide their own services and **not applicable for trading purpose. No entrepreneur or memorandum of application form is acceptable.**

The EMD shall be furnished in Fixed Deposit Receipt (FDR) or Bank Guarantee (BG) (as per **Annexure-III**) from any Nationalised commercial bank doing government business. FDR may be issued in the favour of "DDO, O/o DGM, IMD, New Delhi". Bank Guarantee issued from the foreign banks must be authenticated by STATE BANK OF INDIA or any other Nationalized Bank of India. The clause "encashment/ release of FDR/ BG requires clearance certificate from Purchaser i.e. DGM, IMD" must be mentioned in issued FDR/ BG by Bank.

The earnest money shall be valid for period of sixty (60) days beyond the validity period of the tender.

The clause "release of BG requires clearance certificate from Purchaser i.e. DGM, IMD" must be mentioned in issued BG by Bank.

The earnest money shall be valid for period of sixty (60) days **beyond the validity** period of the tender.

Refund of EMD: Unsuccessful bidders' earnest money will be returned to them **without any interest**, after expiry of the tender validity period. For successful bidder the earnest money will be returned without any interest, after receipt of their performance security.

Forfeiture of EMD: Earnest money of a Bidder will be forfeited, if the bidder withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender or if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged without prejudice to other rights of the purchaser. The successful bidder's earnest money will be forfeited without prejudice to other rights of Purchaser if supplier fails to furnish the required performance security within the specified period.

Bidder shall have to extend the validity of EMD accordingly if extension of tender validity is agreed on the request of purchaser in exceptional cases.

8. Performance Security:

- 8.1 Successful bidder shall submit performance security within twenty-one (21) days from date of dispatch of supply order/award of contract. The purchaser may consider annulment/cancellation of supply order/award of contract if performance security not received in stipulated time
- 8.2 There is no relaxation/exemption in submitting of performance security.
- 8.3 The supplier shall furnish performance security to the purchaser for an amount equal to ten percent (10%) of the total value of the contract, valid up to sixty (60) days beyond the warranty period.
- 8.4 **Performance Security has to be submitted irrespective of its registration NSIC etc. Performance security is not relaxed to any supplier/service provider. Submission of Performance Security is must for all suppliers/service providers.**
- 8.5 The CAMC service provider shall furnish performance security to the purchaser for an amount equal to five per cent (5%) of the total value of the CAMC, valid up to sixty (60) days after the date of completion of all contractual obligations by the supplier/service provider.
- 8.6 Performance Security shall be in the form of Bank Guarantee issued by a National Commercial Bank doing government business in the prescribed form in favour of the purchaser. In the event of any amendment issued to the contract, the supplier shall, within twenty-one (21) days of issue of the amendment, furnish the corresponding amendment to the Performance Security (as necessary), rendering the same valid in all respects in terms of the contract, as amended. In case of foreign bidder, Bank Guarantee issued from the foreign banks must be authenticated by STATE BANK OF INDIA or any other Nationalized Bank of India.
- 8.7 The purchaser will release the Performance Security without any interest to the supplier/service provider on completion of the supplier's all contractual obligations including the warranty obligations & after receipt of performance security for CAMC. The supplier shall submit pre-receipt for obtaining back their security.

9. Terms of Delivery:

Goods shall be delivered by the supplier in accordance with the terms of delivery specified in the contract. Generally it is **F.O.R destination** .Suppliers should not deliver the goods without any valid delivery period. Purchaser shall not be held responsible for any thing (payment and loss of stores etc.) if stores supplied without any valid delivery period as purchaser reserve the right to reject the delivery and terminate the supply order.

10. Delivery schedule: As per section under RFP ('Technical specification').

Date on which all the stores as per supply order have been delivered to the consignee shall be treated as final date of delivery of stores.

11. Force Majeure:

Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to, acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, and freight embargoes. If there is delay in performance or other failures by the supplier to perform its obligation under its contract due to event of a Force Majeure, the supplier shall not be held responsible for such delays/failures. **If a Force Majeure situation arises, the supplier shall promptly notify the purchaser in writing of such conditions along with supporting documents** and the cause thereof within twenty-one days of occurrence of such event. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side. There may be a Force Majeure situation affecting the purchase organization only. In such a situation the purchase organization shall take up with the supplier on similar lines as above for further necessary action.

12. Modification of contract

If necessary, the purchaser may issue an order to the bidder/supplier at any time for amendment of the contract by making alterations and modifications within the general scope of contract during the period of the contract. If the supplier doesn't agree to the adjustment made by the purchaser, the bidder shall convey its views to the purchaser within fifteen (15) days from the date of the supplier's receipt of the purchaser's amendment/modification of the contract.

13. Taxes and Duties:

13.1 Duty and Taxes: Integrator / Supplier shall pay IGST/SGST and other taxes where applicable as per existing rules at that time. Normally materials to be supplied to Govt. Department against Govt. contracts are exempted from levy of town duty, Octroi duty, terminal tax and other levies of local bodies. The local Town/Municipal Body regulations at times, however, provide for such exemption only on production of such exemption certificate from any authorized officer. Contractors should ensure that stores ordered against contracts placed by this office are exempted from levy of town duty/Octroi duty, Terminal tax or other local taxes and duties. Wherever required, they should obtain the exemption certificate from the indenter /consignee concerned, to avoid payment of such local taxes or duties. The supplier shall pay the Octroi, entry tax etc. if exemption certificate not agreed by local authorities and same may be got reimbursed from purchaser on proof of payments.

13.2 Supply of Road Permits by the indenter /consignees: In all such cases where the requirement of Road Permit for entry of goods into a particular State is mandatory, the following provisions shall be strictly followed: -

- (i) The supplier shall request the indenter /consignee for providing Road permit/ Way bill within 10 days of the receipt of the Supply order. The supplier shall furnish all the necessary information and documents in this regard to Indenter/consignee.
- (ii) On receipt of the above request from the supplier, the indenter/consignee concerned shall arrange to provide the Road permit/Way Bill in the prescribed form to the supplier within a maximum period of two weeks so that the same reaches the supplier before the dispatch of the stores. However, in cases where the Road permit/Way Bill is issued on proof of actual invoice of the material, the consignee shall arrange to provide the Road permit/Way Bill from appropriate authorities within a maximum period of 10 days from the receipt of invoice.
- (iii) The supplier shall pay the local charges/taxes (Octroi etc.) if exemption certificate not agreed by local authority and same will be reimbursed by purchaser on submission of receipt.

The supplier shall not be held responsible for any delay in supply due to non-supply/delayed supply of Road permit.

13.3 Income Tax and GST etc: Tax deducted at source (TDS) shall be done before making payment to the suppliers as per existing law in force. The bidders may visit website of Income Tax Department of India for details of Tax Liabilities, Rules, and Procedures etc. The bidders shall have to provide their Permanent Income Tax Number (PAN) and GST registration number. All the applicable taxes such as GST etc. shall be borne by the vender.

14. Fall Clause

The bidder undertakes that it has not supplied/is not supplying similar products/systems or subsystems at a price lower than that offered in the present bid in respect of any Ministry/Department of the Government of India or Public Sector Unit (PSU) and if it is found at any stage that similar products/systems or subsystems was supplied by the BIDDER to any Ministry/Department of the Government of India or Public Sector Unit (PSU) at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and difference in the cost would be refunded by the BIDDER to the BUYER (India Meteorological Department) or it will be adjusted from their bills, if the contract has already been concluded.

15. Termination of tender by the Purchaser:

From the time of submission of tender to the time of awarding the contract, if a bidder needs to contact the purchaser for any reason relating to this tender enquiry and/or its tender, it should do so only in writing.

In case a bidder attempts to influence the purchaser in the purchaser's decision on scrutiny, comparison & evaluation of bidders and awarding the contract, the tender of the

bidder shall be liable for rejection in addition to appropriate administrative actions being taken against that bidder, as deemed fit by the purchaser.

The purchaser, without prejudice to any other contractual rights and remedies available to it (the purchaser), may, by written notice of default sent to the supplier, terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the purchaser. In the event of the purchaser terminating the contract in whole or in part, the purchaser may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and the supplier shall be liable to the purchaser for the extra expenditure, if any, incurred by the purchaser for arranging such procurement. If the supplier becomes bankrupt or otherwise insolvent, the purchaser reserves the right to terminate the contract at any time, by serving written notice to the supplier without any compensation, whatsoever, to the supplier, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the purchaser.

16. Arbitration clause:

If dispute or difference of any kind shall arise between the purchaser and the supplier in connection with or relating to the extension of contract, the parties shall make every effort to resolve the same amicably by mutual consultations. If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, unless otherwise provided in the “List of requirements/ technical specifications” section either the purchaser or the supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided the applicable arbitration procedure will be as per Indian Arbitration and Conciliation Act, 1996. In the case of a dispute or difference arising between the Purchaser/ Consignee and all suppliers relating to any matter arising out of or connected with the contract, such dispute or difference shall be referred to the sole arbitration of an officer, appointed to be the arbitrator by the Director General of Meteorology. The award of the arbitrator shall be final and binding on the parties to the contract. Each party shall bear its own cost.

Venue of Arbitration: The venue of arbitration shall be the place from where the contract has been issued, i.e., New Delhi. The contract shall be interpreted in accordance with the laws of India.

SECTION – VIII

SPECIAL CONDITIONS OF CONTRACT (SCC)

1. Warranty:

The warranty shall be **Onsite warranty for three years after successful commissioning of XML Based Automatic Data Switching System with Automated Pre-Flight Information Systems for Briefing, Consultation, Flight Planning and Flight Documentation (On Line Briefing System-OLBS)**. All stores to be supplied should be free from all defects and faults in material workmanship and manufacture. They should be of the highest grade and consistent with the established and generally accepted standards for material of the type used and in full conformity with the specifications, drawings, or samples and shall, if operable, operate properly. **The Seller shall be bound to furnish a clear written warranty regarding the same**. The Seller will be required to replace them free of cost inclusive of all freight and handling charges. The supplier shall provide warranty certificate from the OEM & OSC for the goods along with date of manufacturing of stores/products.

The supplier shall take over the replaced parts/goods after providing their replacements and no claim, whatsoever shall lie on the purchaser for such replaced parts/goods thereafter. Custom charges if any, for Re-export/re-import of defective parts/repairs or replaced parts to the foreign supplier country for repairs etc shall be borne by supplier only. Transportation cost and Octroi etc, for sending defective parts for repairs and sending back repaired or replaced one to IMD site(s), shall be borne by supplier itself.

Other condition under warranty clause of “List of requirements/ technical specifications” section shall also be applicable.

2. List of Deliverables:

The Bidder shall submit the final list (List of Deliverables) of their proposal as per **Annexure-VIII** for all the stores, H/w, S/w, items, subunits etc and all other services which bidder is going to offer in their technical proposal to meet the requirement under **“List of requirement & Technical specifications”** of this tender document. The list of deliverables shall be same as submitted in the price bid. **The price bid shall not be considered if it is not matching with the list of deliverables submitted with technical bids.**

3. Comprehensive Annual Maintenance Contract (CAMC):

The Purchaser/Consignee reserves the rights to enter into Comprehensive Maintenance Contract between Consignee and the Supplier after the completion of warranty period. CAMC shall be only for the maintenance of stores (equipment and software only). Prospective bidders are advised to quote accordingly and specifically. **It**

should not be quoted in terms of percentage of project as consumable, transportation, warranty; installations, training etc are not covered.

The cost components towards CAMC are to mentioned and added in bid by bidders for its evaluation on overall basis to decide the ranking of tender. Generally, payment for maintenance contract is made on quarterly basis unless it is specified in technical section. The supplier shall enter into agreement with consignee, if required.

4. Penalty clause/Liquidated damages clause (LD) for delayed stores & Services:

- 4.1** The supplier shall deliver the goods and perform the services (like installation & commissioning etc) under the contract within the time schedule specified by the purchaser in the “List of requirements/ technical specifications” section and as incorporated in the contract. **The delivery date, unless delivery is divided, on which all the items/stores/materials/services etc as per supply/purchase order are delivered shall be taken into account for penalty/LD purpose.**

The purchaser shall, without prejudice to other rights and remedies available to the purchaser under the contract, deduct as penalty/liquidate damage equivalent to 1% (one percent) per week of delay subject to a maximum of 10% of the contract amount. LD shall not be imposed under force majeure conditions. Once the maximum is reached purchaser may also consider followings:

- (i) Forfeiture of its performance security and
- (ii) Termination of the contract for default.

Note: The supplier shall not be held responsible for delay in delivery of stores and their installation for the following reasons:

- (i) Delay in providing Entry permits/Road Permits (if required) to the supplier by the consignee.
- (ii) Delay in providing proper site(s) by the consignee to the supplier. Site is not ready in all respect (i.e. all civil & electrical at site completed) for installation of stores.
- (iii) Delay in providing No Objection Certificate (NOC) required from any other government agency/agencies.
- (iv) Communication facility required for project to be provided to the supplier by the consignee if it is not the responsibility of supplier.
- (v) Any other reason for which supplier is not responsible.

- 4.2** (i) Penalty/Liquidated damages shall be calculated on the purchase/contract price including the element of sales tax, excise duty, service tax etc mentioned in the price bids
- (ii) Custom duty shall not be taken for the purpose of Penalty/LD calculations.

- 4.3** The supplier shall not be held responsible for any delay in custom clearance by purchaser, handing over proper site by consignee and any other delay in part of consignee/purchaser, if responsible. **These periods shall not be counted in LD.** The supplier shall not dispatch the goods after expiry of the delivery period. The supplier

is required to apply to the purchaser for extension of delivery period and obtain the same before despatch. In case the supplier dispatches the goods without obtaining an extension, it would be doing so at its own risk and no claim for payment for such supply and/or any other expense related to such supply shall be against the purchaser. **The supplier shall inform to the purchaser (CPU) directly in writing about these delays on part of IMD.**

5. Award Criteria and Tolerance Clause:

The purchase order /supply order shall be awarded to the eligible responsive tender evaluated as the most economical, technically qualified and suitable to the requirements. The purchaser reserves the right to increase or decrease the quantity of required goods up to plus minus fifteen percent ($\pm 15\%$) till the placement of supply/purchase order or contract without any change in the terms & conditions and prices quoted by the bidders. Based on the purchaser's requirement a repeat order may also be placed as per GFR rule.

6. Terms and Mode of Payment

Payment Terms: Payment, as per term mentioned in RFP Technical Specifications at Para 12, shall be made subject to recoveries, if any, by way of liquidated damages /penalty clause /TDS or any other charges as per terms & conditions of contract if not specified elsewhere in the document.

6.1 Payment towards Comprehensive Annual Maintenance Contract Charges (CAMC): Payment shall be made as per "RFP-List of requirements/technical specifications" section. The consignee will enter into CAMC if required for selective items with the supplier at the rates as stipulated in the contract after warranty period. The payment of CAMC will be made after satisfactory completion of said period and duly certified by the consignee. The consignee shall deal this issue separately and directly. The supplier shall deal CAMC agreement and payment etc. directly with the consignee.

6.2 The supplier shall send its claim for payment in writing, when contractually due, along with relevant documents etc., duly signed with date, to respective consignees.

6.3 Bills/invoices must be submitted separately for stores and services.

6.4 The supplier shall send its claim for payment in writing, when contractually due, along with relevant documents etc., duly signed with date, to consignee.

6.5 The bidder shall submit particulars of his bank account required for making payments.

(i) Account Number (ii) Bank Name (iii) Branch Name (iv) Address

(v) IFSC code (vi) MICR No. (vii) Telephone No. (viii) SWIFT code etc.

SECTION – IX
STANDARD FORMATS

Annexure-I

CHECKLIST

(Checklist shall be attached in the beginning of the tender)

S.N.	Activity	Compliance Yes/ No/ NA	Page No. in Your document
1	(i) Have you submitted EMD of required amount?		
	(ii) Validity of 240 days of EMD (Bank Guarantee) from Tender Opening date		
	(iii) Is registration certificate from NSIC /govt. bodies attached for relaxation of EMD?		
2.	Have you kept validity of tender for acceptance by the purchaser as per the TE document?		
3.	Have you submitted duly filled, signed & stamped all bidding documents, accepting all terms and conditions of the tender document.		
4	Have you enclosed clause-by-clause compliance statement for the "List of requirements/technical specifications "section?		
5.	Have you submitted copy of the last purchase order(s) and end user certificate*?		
6.	Is tender submitted as an OEM?		
	Is tender submitted by authorized Agent/Dealer/ supplier/ distributor/ subsidiary/ integrator etc of OEM?		
	If Not OEM, Is Authorization letter and back to back service support from OEMs (equipment manufacturer and software developer company) is attached?		

S.N.	Activity	Compliance Yes/ No/ NA	Page No. in Your document
7.	(i) Permanent Account No. of Bidder with proof.		
	(ii) Is Sales & Service tax number with registration certificate attached?		
8.	Name of the bidder with complete address, who quoted the price.		
9.	Name of currency in which work/supply order to be placed.		
10	Whether Bidder's bank details given?		
11	The bidder has to submit the Pre-Contract Integrity Pact duly signed by the authorized signatory of the firm/ company with the bid.		
12.	Whether Un price bid duly signed by the authorized signatory of the firm/ company with the bid submitted.		

*** User certificate should be from any government organization/PSU/public sector/internationally or nationally recognized institutes or sectors.**

(Name & Signature with date and firm/company seal)

TENDER TERMS & CONDITIONS ACCEPTANCE FORM

(For all the terms & conditions of tender document are acceptable to bidder)

To
The Director General of Meteorology,
India Meteorological Department,
Lodi Road, New Delhi-110003

Ref: TE document No. CPU/_____ dated _____

I/We, the undersigned have examined the above mentioned TE document, including amendment/corrigendum No. _____, dated _____ (*if any*), the receipt of which is hereby confirmed. We now offer to supply and deliver *the goods and services in conformity with your above referred document.*

If our tender is accepted, we undertake to supply the goods and perform the services (Installation & commissioning etc.) as mentioned in tender document with the delivery schedule specified in the “RFP- List of requirements/ technical specifications”.

I/We further confirm that, if supply/purchase order is placed to bidder, we shall provide performance security of required amount in an acceptable form for due performance of the contract.

I/We agree to keep our tender valid for acceptance as required in tender document or for subsequently extended period, if any, agreed to by us. I/We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. I/We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

I/We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

We confirm that we do not stand deregistered/banned/blacklisted by any Govt. Authorities.

I/We confirm that we fully accept and agree to all the terms and conditions specified in above mentioned TE document, including amendment/ corrigendum etc. if any.

(Signature with date and seal of the company)

(Name and designation)

Duly authorised to sign tender for and on behalf of bidder

**Note*: 1. Bidder/company shall use their own printed letter head for issuing this certificate.
2. Acceptance shall be unconditional.**

**MODEL BANK GUARANTEE FORMAT FOR FURNISHING EMD
(Format only)**

Whereas
(hereinafter called the “bidder”)
has submitted their offer dated.....
for the supply of
(hereinafter called the “tender”)
against the purchaser’s tender enquiry 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 of20.....

THE CONDITIONS OF THIS OBLIGATION ARE:

- (1) If the bidder withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- (2) If the bidder having been notified of the acceptance of his tender by the Purchaser during the period of its validity: -
 - a) If the bidder fails to furnish the Performance Security for the due performance of the contract.
 - b) Fails or refuses to accept/execute the contract.

WE undertake to pay the “Director General of Meteorology, India Meteorological Department”, 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 60 days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

Bank Guarantee issued with the tender enquiry reference No. CPU/..... Dated.....

.....
(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

PRICE BID FORMAT(FOR ONE SITE)
TO BE SUBMITTED BLANK WITH TECHNO-COMMERCIAL BID AND WITH
PRICE IN THE FINANCIAL BID.
(KINDLY ENSURE THAT PRICES SHOULD NOT BE REVEALED IN THE TECHNO-
COMMERCIAL BID WHICH WILL LEAD TO REJECTION OF THE BID)

S. No.	Item	Qty. Nos.	UNIT PRICE			Total price
			Base price	Applicable taxes and duties	Total price	
1	2	3	4	5	6=4+5	7=6x3
1.	Servers	2				
2.	KVM switch	1				
3.	KVM Console	1				
4.	24U Rack	1				
5.	Supervisory & operator terminals with monitor	7				
6.	Color scanner	1				
7.	Color Laser Printer	1				
8.	Laser Printer(duplex Mono)	2				
9.	Communication Subsystem	1 lots				
10.	Line termination unit with Tool kit	1 lots				
11.	Mobile modems	2				
12.	Switching Router	2				
13.	Hardware firewall	1				
14.	24 Port layer- 2 Switch	4				
15.	8 Port un-managed Switch	2				
16.	Laptop	1				
17.	10 KVA UPS with 2 hrs backup	2				
18.	Spare Parts					
(i)	Hard drive(1.2 TB)	8				
(ii)	LTO-6 or higher Tape Drive	10				
(iii)	External Hard drive(2 TB)	2				
(iv)	Pen Drive(Minimum -32GB)	4				
(v)	DVD	10				
19.	METAR DISPLAY SYSTEM					
(i)	IP Color TV (minimum 26")+ Network switch and connecting cables	12				
(ii)	Metar Display PCs	2				

(iii)	System Software for METAR display system	2				
20.	AMSS SOFTWARE					
(i)	System Software including VM Software (VMware vSphere Essentials Plus Kit) for XML based automatic data switching software	1 set				
(ii)	Application software for XML based automatic data switching software	1 set				
(iii)	Application software for OLBS*	*				
(iv)	Metar Display System Software	1 set				
21.	GPS hardware	1 set				
22.	Installation & Commissioning charges	1 job				
23.	Year wise Comprehensive Warranty support of all supplied hardware and software including XML based automatic data switching software , OLBS software, VM & OS with updates for three (3) years First year Second year Third year	1 job				
24.	Year wise Comprehensive Annual Maintenance contract (CAMC) for maintenance of all supplied hardware and software including XML based automatic data switching software , OLBS software, VM & OS with updates of five (5) years . First year Second year Third year Fourth year Fifth year	1 job				
25.	Training	1 job				
26.	Transportation	1 job				
27.	Miscellaneous (to meet the project requirement)					

***Application software for OLBS shall be required to be delivered only at two locations (Delhi and Chennai)**

Note: Licenses for all the software such as Application, VM etc including OS should be supplied with life time validity

Total Tender price in figure:

And in words:

Note/instruction:

1. The bidder shall use their own letter head for quoting the prices.
2. Price shall be preferred in above format.
3. The names of each stores/items offered in technical proposal must be mentioned with make & Model including services etc if any. The deliverables list attached with financial bid must be exactly same as per the technical bids.
4. Charges, if any, for inland (within the India) Transportation /freight/insurance of stores shall be mentioned. In case not mentioned, it is treated as free of cost.
5. If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.
6. All applicable taxes must be mentioned against each item. Rate of each applicable tax must be mentioned in price bid. If taxes not mentioned, then it is treated that price quoted is inclusive of taxes.
7. Costing for each and every items and sub items which is offered in technical bid shall be done with all breakups. Charges for FAT, Trainings, installation, SAT and other services etc. are to be mentioned clearly in price bid.
8. Price Bid (in .pdf format excluding note/instruction) shall be uploaded on eprocure.gov.in

Signature of Bidder

Seal of the Bidder

PRE-CONTRACT INTEGRITY PACT

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on day of the -----month of 2018, between, on one hand, the President of India acting through **Director General of Meteorology, India Meteorological Department, Ministry of Earth Sciences**, Government of India, **Lodi Road, New Delhi** (hereinafter called the “BUYER”, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s represented by Shri Chief Executive Officer (hereinafter called the “BIDDER/Seller” which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

1. WHEREAS the BUYER proposes to **Procure XML Based Automatic Data Switching System with Automated Pre-Flight Information Systems for Briefing, Consultation, Flight Planning and Flight Documentation(On Line Briefing System-OLBS) with Integration with Integration and Commissioning at Aerodrome Meteorological Offices (AMOs)at four Airports- New Delhi, Kolkata, Chennai and Mumbai** as per details in RFP of tender Document and the BIDDER/Seller is willing to offer the stores and WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/Department of the Government of India performing its functions on behalf of the President of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Commitments of the BUYER

- 1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favor or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

- 1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

Commitments of BIDDERS

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following: -
 - 3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
 - 3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favor or disfavor to any person in relation to the contract or any other contract with the Government.
 - 3.3* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.
 - 3.4* BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
 - 3.5* The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorized government sponsored export entity of the defense stores and has not engaged any individual or BIDDER or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, BIDDER or company in respect of any such intercession, facilitation or recommendation.
 - 3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

- 3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.
The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.
- 3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

- 4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.
- 4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

- 5.1 While submitting commercial bid, the BIDDER shall deposit an amount (To be specified in RFP) as Earnest Money/Security Deposit, with the BUYER through any of the following instruments:
 - (i) A confirmed guarantee by an Indian Nationalized Bank, promising payment of the guaranteed sum to the BUYER on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.
 - (ii) Any other mode or through any other instrument (to be specified in the RFP).
- 5.2 The Earnest Money/Security Deposit shall be valid up to a period of eight months or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period, whichever is later.
- 5.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

6. Sanctions for Violations

6.1 Actions are as follows:

- (i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.
- (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
- (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
- (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
- (v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.
- (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.
- (vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.
- (viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
- (x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

8. Independent Monitors

8.1 The BUYER has appointed following two Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission;

- i. Shri Arun Kumar, Secretary, Oil Industry Development Board (OIDB), B-38, Vrindavan Apartment, Plot No. 1, Sector 6, Dwarka, New Delhi-110075 (E-mail: kumararun_53@rediffmail.com ; Mobile No. 9810621113).**
- ii. Shri Sushil Gupta, Ex Chairman, Central Ground Water Board (CGWB) & Central Ground Water Authority (CGWA), No. B 702, Aravali Heights, Sector 21 C, Faridabad, Haryana, PIN 121001. (E-mail: sushilanitagupta@yahoo.com, Mobile No. 09999744061).**

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER/BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 8 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions

13. The parties hereby sign this Integrity Pact at New Delhi on.....

BUYER
Name of the officer.
Designation
Deptt./MINISTRY

BIDDER
CHIEF EXECUTIVE OFFICER

Witness

1. _

2. _

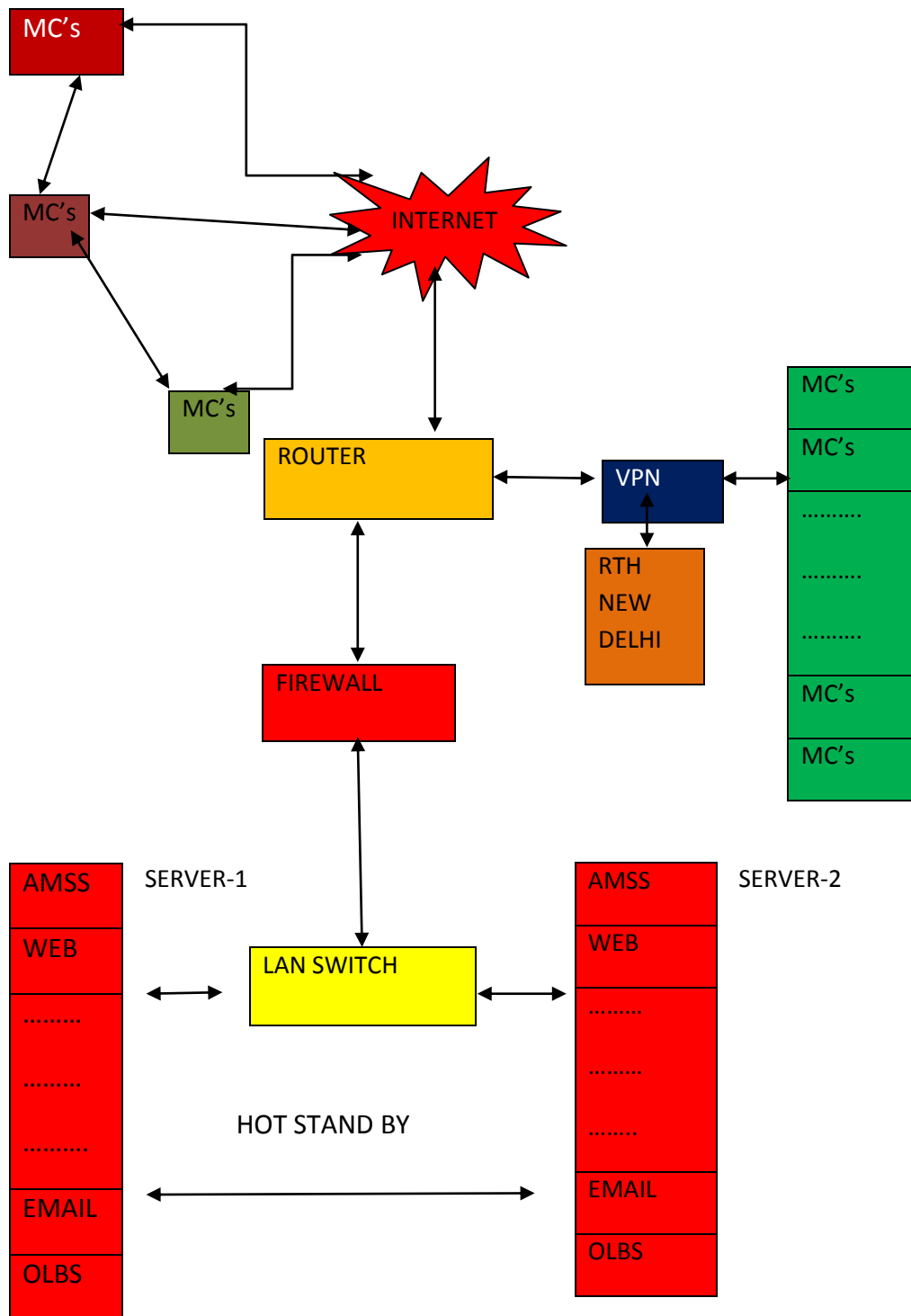
Witness

1. _

2. _

* Provisions of these clauses would need to be amended/ deleted in line with the policy of the BUYER in regard to involvement of Indian agents of foreign suppliers.

BLOCK DIAGRAM OF THE SYSTEM



COMPLIANCE STATEMENT TABLE

S. N.	Para & sub-para of	Details/Description	Compliance/Non-compliance/Noted	Remarks
1		Section I: Notice Inviting Tender(NIT)		
2		Section II: Instructions to Bidders (ITB)		
3	1	Introduction		
4	2	Language of Tender		
5	3	Eligible Goods and Services		
6	4	Tendering Expense		
7	5	Regular visit of website		
8	6	Amendments to Tender Enquiry (TE) documents		
9	7	Signing and uploading of Tender		
10	8	Alteration and Withdrawal of Tender		
11	9	Opening of Tenders		
12	10	Scrutiny and Evaluation of Bids		
13	10.1	Unresponsive Bids		
14	10.2	Technical Evaluation		
15	10.3	Financial Evaluation		
16	10.4	Conversion of currencies to Indian Rupees and Exchange Rate Variation (ERV)		
17	11	Packing and Marking		
18		Section III: Appendix to Instructions to Bidders(AITB)		

19	1	Pre-Bid Conference		
20	2	Submission of Bids		
21	2.1	Part-1 (Techno–Commercial bid)		
22	2.2	Part-2 (Price Bid)		
23		Section IV: Eligibility & Qualification criterion for Bidders		
24		Section V: Schedule of Requirement		
25	1.	Background		
26	1.1	Present Set-up		
27	1.2	Scope of the work and system requirement under present tender		
28	2.	Overview of Requirements		
29		Section VI: Technical specifications (including Drawings) and Quality Assurance (Inspections and Tests)		
30	1.	Hardware		
31	1.1	Rack Mount Server		
32	1.2	KVM SWITCH		
33	1.3	KVM Console		
34	1.4	Rack		
35	1.5	Supervisory & Operator Terminals		
36	1.6	COLOUR SCANNER		
37	1.7	COLOURLASERJET Printer (Industry Standard)		
38	1.8	LASER Printer (Duplex Monochrome- Industry Standard)		
39	1.9	Laptops		
40	1.10	Modems		
41	1.11	Router: CISCO makes		

42	1.12	Hardware Firewall		
43	1.12.1	Functional Specification – Firewall		
44	1.12.2	Functional Specification – Web content, URL & APP filtering		
45	1.12.3	Functional Specification - IPSEC VPN		
46	1.12.4	Functional Specification –IPS		
47	1.12.5	Functional Specification –Anti-Virus		
48	1.12.6	Hardware & Performance & Architecture		
49	1.12.7	BOT and Malware Prevention		
50	1.12.8	Anti-Spam & Email Security		
51	1.12.9	Additional Features Required		
52	1.12.10	Logging and Reporting		
53	1.12.11	24 ports Managed Switches (10/100/1000 Mbps)		
54	2	Current weather Display System (METAR Display system)		
55	2.1	UPS		
56	2.2	COMMUNICATION SUB-SYSTEM		
57	2.2.1-2.2.3	Communication sub-system should be support the following WMO guidelines		
58	2.2.4	Tool Kit		
59	3	GPS Hardware specification		
60	4	Spare Parts		
61	5	System and Application Software		
62	5.1	System Software		
63	5.1.1	Operating system		
64	5.1.2	VM Software		
65	5.1.3-5.1.4	Communication system software		

66	5.2(5.2.1-5.2.33)	Application Software		
67	5.3(5.3.1-5.3.3)	WMO Procedures		
68	5.4(5.4.1-5.4.2)	DATABASE AND QUERY MANAGEMENT		
69	5.5(5.5.1-5.5.6)	QUEUE MANAGEMENT		
70	5.6(5.6.1-5.6.19)	MONITORING AND USER INTERFACE MODULE		
71	5.7	DATA BASE Server software		
72	5.8(5.8.1-5.8.4)	Control and monitoring Unit		
73	5.9(5.9.1-5.9.7)	GUI based user interface software module		
74	5.10(5.10.1- 5.10.5)	Security		
75	5.11(5.11.1- 5.11.5)	WMO/AFTN Procedures		
76	5.12	METAR DISPLAY Software		
77	6(6.1-6.48)	Automated Pre-Flight Information Systems for Briefing, Consultation, Flight Planning and Flight Documentation		
78	7	Requirements for presentations and references		
79	8	Factory Acceptance Testing(FAT)		
80	9	Delivery terms, Schedule and Installation		
81	9.1	Delivery terms		
82	9.2	Delivery Schedule		
83	9.3	Installation		
84	10	Site Acceptance Test		
85	11	Training		
86	12	Documentation		
87	13	Compliance/Non-compliance statement		

88	14	Warranty		
89	15	Comprehensive Annual Maintenance Contract (CAMC)		
90	16	Service Window		
91	17	Terms and Conditions		
92	18	Payment Clause		
93	19	Penalty Clauses during Warranty and CAMC		
94	20	List of Deliverables		
95	21	Pre-bid meeting		
96		Section VII: General Conditions of Contract (GCC)		
97	1	General-I		
98	2	General-II		
99	3	Tender Validity		
100	4	Purchaser's Right to accept any tender and to reject any or all bids		
101	5	Tender Fee		
102	6(6.1-6.2)	Purchase /Price preference		
103	7	Earnest Money Deposit (EMD)		
104	8(8.1-8.7)	Performance Security		
105	9	Terms of Delivery		
106	10	Delivery Schedule		
107	11	Force Majeure		
108	12	Modification of Contract		
109	13	Taxes and Duties in India		
110	13.1	Duty and Taxes		
111	13.2	Supply of Road Permits by the indenter /consignees		
112	13.3	Income Tax and GST etc		

113	14	Fall Clause		
114	15	Termination of tender by the Purchaser		
115	16	Arbitration clause		
116		Section VIII: Special Conditions of Contract (SCC)		
117	1	Warranty		
118	2	List of Deliverables		
119	3	Comprehensive Annual Maintenance Contract (CAMC)		
120	4(4.1-4.4)	Penalty clause/Liquidated damages clause (LD) for delayed stores & Services		
121	5	Award Criteria and Tolerance Clause		
122	6(6.1.6.5)	Terms and Mode of Payment		
123		Section IX: Standard Format		
124	1	Annexure- I CHECKLIST		
125	2	Annexure-II TENDER TERMS & CONDITIONS ACCEPTANCE FORM		
126	3	Annexure-III MODEL BANK GUARANTEE FORMAT FOR FURNISHING EMD		
127	4	Annexure-IV PRICE BID FORMAT(FOR ONE SITE)		
128	5	Annexure-V PRE-CONTRACT INTEGRITY PACT		
129	6	Annexure-VI BLOCK DIAGRAM OF THE PROPOSED SYSTEM		
130	7	Annexure-VII COMPLIANCE STATEMENT TABLE		
131	8	Annexure-VIII PROPOSED LIST OF DELIVERABLES (FOR ONE SITE)		
132	9	Annexure-IX CHANGES TO WMO-No.386 THE MANUAL ON THE GLOBAL TELECOMMUNICATIONS SYSTEMS(2015 EDITION) TO TAKE EFFECT FROM 1 NOVEMBER 2016		

Note: the above table is just indicative. Details of the Solution Offered as required by IMD under RFP for each para and sub-para separately to be provided by the bidder

Signed

(Name of the Authorized Signatory) Signature of CA/ Statutory Auditors

For and on behalf of (with seal & registration no.)

(Name of the Bidder)

Designation

Place:

Date

PROPOSED LIST OF DELIVERABLES (FOR ONE SITE)

S.N (1)	Name of Item/Store (2)	Quantity per site (3)	Make & model(4) **
1	Servers	2	
2	KVM switch	1	
3	KVM Console	1	
4	24U Rack	1	
5	Supervisory & operator terminals	7	
6	Color scanner	1	
7	Color Laser Printer	1	
8	Laser Printer(duplex Mono)	2	
9	Communication Subsystem	1 lots	
10	Line termination unit with Tool kit	1 lots	
11	Mobile modems	2	
12	Switching Router	2	
13	Hardware firewall	1	
14	24 Port layer- 2 Switch	4	
15	8 Port un-managed Switch	2	
16	Laptop	1	
17	10 KVA UPS with 2 hrs backup	2	
18	Spare Parts		
(i)	Hard drive(1.2 TB)	8	
(ii)	LTO-6 or higher Tape Drive	10	
(iii)	External Hard drive(2 TB)	2	
(iv)	Pen Drive(Minimum- 32 GB)	4	
(v)	DVD	10	
19	METAR DISPLAY SYSTEM		
(i)	Color Monitor (21 "TFT)+ Network switch and connecting cables as per para 8.0	12	
(ii)	Metar Display PCs	2	
(iii)	System Software for METAR display system	2	
20	AMSS SOFTWARE		
(i)	System Software including VM Software (VMware vSphere Essentials Plus Kit) for XML based automatic data switching software	1 set	
(ii)	Application software for XML based automatic data switching software	1set	
(iii)	Application software for OLBS*	*	

(iv)	Metar Display System Software	1 set	
21	GPS hardware	1 set	
22	Installation & Commissioning charges	1 job	
23	Year wise Comprehensive Warranty support of all supplied hardware and software including XML based automatic data switching software , OLBS software, VM & OS with updates for three (3) years	1st year, 2nd year, 3rd year	
24	Year wise Comprehensive Annual Maintenance contract (CAMC) for maintenance of all supplied hardware and software including XML based automatic data switching software , OLBS software, VM & OS with updates of five (5) years .	1st year, 2nd year 3rd year, 4th year, 5th year	
25	Training	1 job	
26	Transportation		
27	Miscellaneous (to meet the project requirement)		

*Application software for OLBS shall be required to be delivered only at two locations (Delhi and Chennai)

** Make & Model has no role in evaluation and determination for **lowest offer (L1)**.

Note: Licenses for all the software such as Application, VM etc including OS should be supplied with life time validity

CHANGES TO WMO- No. 386 THE MANUAL ON THE GLOBAL TELECOMMUNICATIONS SYSTEM (2015 EDITION) TO TAKE EFFECT FROM 1 NOVEMBER 2016.

Changes to take effect 1 November 2016

Amend table B7 of WMO-No. 386 Manual on the Global Telecommunication System to add rows for designators K, U and W.

Designator	Data Type	GTS Priority	Code Form Name
K	Tropical cyclone advisories	3	
U	Volcanic ash advisory	3	
W	AIRMET	1	

Amend the Note to table B7 as follows.

Note: Data that are expressed in extensible markup language (XML) and use data designators of T1 = L and T2 = A, C, K, P, S, T, U, V, W and Y are using IWXXM (FM205).

Abbreviations:

AMSS	: Automatic Message Switching System
AAI	: Airport Authority of India (AAI),
AMO	: Airport Meteorological Offices
IMTN	: Improved Main Telecommunication Network
MC	: Meteorological Centers
OPMET	: Operational Meteorological Messages
OLBS	: On Line Briefing System an Automated Pre-Flight Information System for Briefing, Consultation, Flight Planning and Flight Documentation.