

Minutes of the Pre-Bid meeting held on 17.02.2023 for Procurement of 04 numbers of S-Band Doppler Weather Radars (DWRs) for Eastern coast.

India Meteorological Department (IMD) has invited bids vide Tender Enquiry No. CPU/53/0123/1549 dated 25.01.2023 for the procurement of the 04 numbers of S-Band Doppler Weather Radars (DWRs) for Eastern Coast through CPP portal of the Government of India and IMD website.

Secretary, MoES has constituted the Pre Bid Committee vide File No. DGM-HQ-24016(11)/1/UAID-04S-BAND DWRs dated 09.02.2023 comprising the members mentioned below:

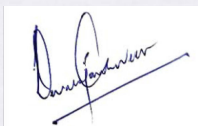
1. Dr. D. Preveen Kumar, Scientist 'G', NCMRWF - Chairman
2. Dr. V.K. Anandan, Scientist 'G', ISTRAC - Member
3. Sh. Gajendra Kumar, Scientist 'F', IMD - Member
4. Sh. B.A.M. Kannan, Scientist 'F', IMD - Member
5. Dr. Sankar Nath, Scientist 'F' & F.O, IMD - Member
6. Sh. Sanjay Bist, Scientist 'E', IMD - Member
7. Sh. Jan Mohmmad, Scientist 'C', IMD - Member Secretary

The bidders from the following firms attended the Pre-Bid Meeting:-

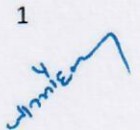
1. M/s. Bharat Electronics Ltd., Bangalore.
2. M/s. Astra Microwave Products Ltd., Hyderabad.
3. M/s. Data Patterns India Pvt. Ltd., Chennai.
4. M/s. Pollution Equipment & Control, Delhi.
5. M/s SGS Weather & Environmental Systems Pvt. Ltd

The Pre-Bid meeting was held in hybrid mode on 17<sup>th</sup> February, 2023 at 11:00 hours in the Conference Room of Mausam Bhawan, New Delhi as well as through VC mode. The second meeting of the committee was held on 06 March 2023 at 14:30 to finalize the clarifications. The Committee discussed and deliberated on all Pre-Bid queries submitted by prospective bidders' vis-à-vis the published tender document. The detailed Clarifications to the queries raised by various firms in writing via email is as follows:

| S. No. | Query of the firm | Tender Page No | Point Description          | Firm Query/Clarification   | Recommendation of the Committee |
|--------|-------------------|----------------|----------------------------|--|---------------------------------|
| 1      | BEL               | Page 36        | 4.3 Max. Unambiguous Range | 1) Consistent with PRFs specified below Sl. No 4.12:<br>2) 2nd trip echo recovery and multi trip echo filtering provision to be present<br>Please specify range (km) | 500 km or better                |





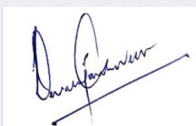



|   |     |         |   |   |  |
|---|-----|---------|---|---|--|
| 2 | BEL | Page 36 | 4.9 Transmitter Type :Klystron  | Considering Klystron based Transmitter operates with High Voltage and High current. Can SSPA based transmitter be offered? Request to confirm and update the RFP accordingly  | As per tender document   |
| 3 | BEL | Page 36 | 4.13 Pulse width 0.5 to 2.0u Sec  | Are there any pulse widths between 0.5 to 2.0u Sec?   | There are pulse width of 0.5, 1.0, 2.0 micro-seconds between 0.5 to 2 micro second.  |
| 4 | BEL | Page 37 | 4.20 Side lobe 27 dB down from the main lobe to 12degrees and beyond 12 degrees better than 40 dB   | Request to change the specification in RFP as " 27 dB down from the main lobe to 12deg and beyond 12 deg better than 30dB"  | As per tender document.  |
| 5 | BEL | Page 37 | 4.28 Radome Type b) Roof hatch for maintenance of obstruction lights and entry from bottom; suitable portable ladder for the purpose of maintenance.  | Request to change the specification in RFP as "b) Provision/approach for maintenance of obstruction light; suitable portable ladder for the purpose of maintenance.   | As per tender document.  |
| 6 | BEL | Page 37 | 4.33 Obstruction lights Twin Light System with solar powered & auto switch with long life lamps. Roof hatch for maintenance of obstruction lights and entry from bottom; suitable portable ladder for the purpose of maintenance. | Request to change the specification in RFP as "Provision/approach for maintenance of obstruction light; suitable portable ladder for the purpose of maintenance."   | As per tender document.  |
| 7 | BEL | Page 41 | 17. The Radome and radar antenna system shall be mounted on the roof top building and other radar equipments will be installed in the room below the antenna.   | Please indicate.<br>a) Weight of the existing antenna and Radome of the present system<br>b) Maximum load bearing capacity of roof top at antenna and Radome installation<br>Data required for assessment of civil scope<br>c) Structural – static & dynamic load analysis data<br>d) Rooftop and room layout drawings. | Weight of the existing 8.5m parabolic dish antenna is approximately 8 Ton including Pedestal and 11.63m dia Radome weighs around 1.1Tons.<br><br>The Radome and antenna system in the present building roof top is holding the operational systems with good structural stability.<br><br>The bidder may visit the site to assess the existing system layout and building structure. |


2  
Jindem

|    |     |         |   |  |  |
|----|-----|---------|---|--|--|
| 8  | BEL | Page 42 | 4.51 General<br>18. Air conditioned equipment shelter with adequate space for housing all radar electronic equipment's, the work station, UPS, Three Phase Voltage Stabilizer, stationery, manuals, tools etc.  | Please clarify this point w.r.to Point 4.51 – 17 General Are ACs provisioned by IMD? If provisioned, specify heat load handling capacity.  | Installation of AC as per the requirement of the system is the responsibility of the vendor  |
| 9  | BEL | Page 43 | 25. IMD will take possession of the radar after commissioning. Cost involved of the system (Radar, inclusive of all the deliverables as per this document) and operator till then shall be borne by the bidder including all consumables and supply of diesel for the DG set. | Supply of DG set not in scope. Supply of diesel may be detached from scope and paid at actuals until commissioning. Please specify consumables   | As per tender document   |
| 10 | BEL | Page 48 | Provision for networking and communication system for data transfer to central location<br><br>h) Data of all radars to be overlaid on GIS map with option to include underlay maps from Google, Open street map or ESRI, Arc GIS etc.  | Please confirm that any one of the mentioned GIS maps underlay is sufficient, as protocol for implementation for each GIS interface is different.  | As per tender document   |
| 11 | BEL | Page 52 | PROJECT SCHEDULE<br>i. Supply of all stores( for first radar) at site within a period of 10 months from issue of contract agreement   | Considering the time required for procurement of long lead items like klystron tube, MW components and manufacturing of Antenna/Radome, the delivery may be modified as 18 months for supply of first radar. | <b>Chapter-3, Para 18. Delivery Schedule, a</b> may be read as "First radar to be installed, accepted and commissioned within 18 months from the date of issue of contract agreement. Rest of the radars shall be delivered, installed and commissioned within 22 months from the date of issue of contract agreement in a phased manner. In this regard the contractor will submit the actual schedule along with time line for execution of installation and commissioning work for each radar." |

|    |     |          |  |  |   |
|----|-----|----------|--|--|---|
|    |     |          |  |  | <p><b>Chapter-3, Para 18. Delivery Schedule, a(i)</b> may be read as "Supply of all stores (for first radar) at site within a period of 15 months from issue of contract agreement."</p> <p>Rest items of Chapter-3, Para 18. Delivery Schedule remains same.</p> |
| 12 | BEL | Page 105 | Annexure XIV<br>All four existing old S-Band Doppler Weather Radar to be dismantled, packed, transported safe places   | Please confirm that Transit is with Insurance.   | Yes. Transit is to be with Insurance.   |
| 13 | BEL | Page 29  | Chapter 2 Conditions of Contract (COC)<br>Sl. No. 20 Terms and Mode of Payment<br>c) Forty percent (40%) payment towards stores will be made after successful installation, endurance tests, completion of onsite training, commissioning and acceptance of the radar at each site.  | Site shall be made available for dismantling of old radar and installation of new radar & commissioning, immediately after delivery. If site is not handed over for installation by IMD, then balance 30% amount to be released within 3 months of delivery and balance 10% post Installation & Commissioning. GST is charged at the applicable rate, however if there is any escalation in GST at the time of delivery, the difference in amount needs to be borne by IMD and to be reimbursed. | As per tender document.   |
| 14 | BEL | Page 21  | Chapter-2 Conditions of Contract (COC)<br>Financial Compliance: Sl. No. 7<br>EMD(Earnest Money Deposit)- The bidder should enclose bid security (EMD) of Rs.1,65,00,000/- (Rupees One Crore Sixty Five Lakh only) in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque, Bank Guarantee, Insurance Surety Bond, from any of the Commercial | EMD (Earnest Money Deposit) - Exemption to be given to BEL, as BEL is a defence PSU and has also supplied DWR to IMD previously. Otherwise IMD should accept the Indemnity Bond provided by BEL.   | As per tender document.   |









4

|    |       |              |  |  |  |
|----|-------|--------------|--|--|--|
|    |       |              | Banks drawn in favour of DDO, O/o DGM, New Delhi   |  |  |
| 15 | BEL   | Page 103-104 | Annexure- XIII Sl. No. (vii) to (xii) Self-Certification regarding Local Content in DWR: vii) Sale Price of the Product viii) Ex-Factory Price of the product ix) Freight, Insurance and handling x)Total bill of Material xi) List and total- cost value of inputs used for manufacture of the Doppler weather radar xii) List and total cost of inputs which are imported, directly or indirectly  | Please clarify Since it's a competitive bid, data for Sl. No. (vii) to (xii) is not applicable and only be certified for Local content.  | As per tender document.  |
| 16 | BEL   | Page No. 48  | Data of all radars to be overlaid on GIS map with option to include underlay maps from <b>Google, Open street map or ESRI, Arc GIS</b> etc.<br><br>Boundary of states will be provided by IMD as shape files. Data of all radars to be overlaid on GIS map with option to include underlay maps from <b>Google, Open street map or ESRI, Arc GIS</b> , etc. GIS server with <b>Open street map</b> to be provided. The products which are to be overlaid are:<br>Reflectivity<br>Rainfall<br>Warnings based on Rainfall, Velocity, Hydrometeor classification.<br>Locally installed and accessible GIS server using <b>Open street map</b> to be provided. | We understand that <b>ESRI</b> is an organization and <b>Arc GIS</b> is a software product of <b>ESRI</b> which uses <b>Open street map</b> as base map. Also, it is noted that <b>Google</b> also uses <b>Open street map</b> as base map. Hence, it is <u>Google</u> maps uses <b>Open street maps</b> or <b>Arc GIS</b> uses <b>Open street maps</b><br><br>Kindly indicate which GIS is required for IMD's requirements. | As per tender document. WMS tiles are provided by Google, OSM, and ESRI-Arc GIS etc. Data of all Radars and Boundary of states (ESRI-shape file) provided by IMD are to be overlaid on these with selectable underlay/overlay options. |
| 17 | ASTRA |              | Chapter-3 Clause 4.6 Clause 4.16 Annexure-XII Clause 4.15 Clause 4.25 VSWR: 1.25:1   | VSWR is a usually applicable for waveguide and Antenna Only. Kindly clarify.   | Yes, VSWR is applicable for waveguide and antenna only, as normally measured closer to the transmitter for its safety is cited under   |

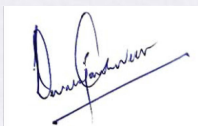
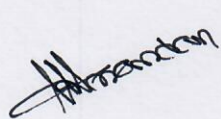
Wenman

5  
Jinmeem

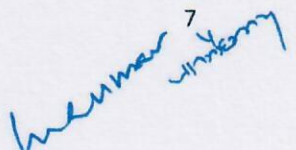
|    |              |  |  |  |   |
|----|--------------|--|--|--|---|
| 18 | ASTRA        |  | Chapter-3 Clause 4.5<br>Annexure-XII Clause 4.5<br>Detection Capability: 13 dBZ or better at 230 km range  | Detection Capability: 13 dBZ or better at 230 km range   | 4.15 also.<br>Detection Capability: 13 dBZ or better at 230 km range with 2RPM 2us Pulse width and 450PRF to be operationally demonstrated. |
| 19 | ASTRA        |  | Chapter-3 Clause 4.11<br>Annexure-XII Clause 4.10<br>Peak power: Higher than 500 KW at antenna feed for single polarization and 250KW in each horizontal and vertical feeds required to meet 13 dBZ at 230 Km as per point No. 4.5 above.  | Higher than 500 kW of power for single polarization at the antenna feed is required? Kindly clarify.   | Yes. Higher than 500 kW of power for single polarization at the antenna feed is required  |
| 20 | ASTRA        |  | Chapter-3 Clause 4.14<br>Annexure-XII Clause 4.13<br>Duty Ratio: Up to 0.002   | Duty cycle of 0.002 is quite high. Kindly clarify  | As per tender document.   |
| 21 | ASTRA        |  | Chapter-3 Clause 4.40<br>Annexure-XII Clause 4.39<br>Clutter Suppression: a) Clutter Elimination for 50 dB or better.  | We request IMD to relax the clutter suppression value to 35 dB.  | As per tender document.   |
| 22 | ASTRA        |  | Chapter-3 Clause 4.41 – (b)<br>Annexure-XII Clause 4.40 – (b)<br>b) Radial Velocity VH : ± 30 m/s  | Using PRF Ratios, what is the maximum value desired by IMD. Kindly clarify.  | Maximum value using PRF Ratios 600:450 is ± 45 m/s.   |
| 23 | ASTRA        |  | Annexure XIV<br>All four existing old S-Band Doppler Weather Radar to be dismantled, packed, transported and to be kept at safe places   | Is storage material ex. Boxes, crates etc. bidder's responsibility?  | Yes. Storage material ex. Boxes, crates etc. is bidder's responsibility.  |
| 24 | DATA PATTERN |  | Chapter-2 (CoC), <b>Para-5 (Experience and Past Performance):</b> "The Bidder shall satisfy the following criteria to qualify during the last ten years from the date of submission date. Must have executed successfully at least <b>one supply order of similar Doppler weather radar.</b> " | Light/clarity on <b>"similar" word and provide proper explanation.</b> Does it mean One supply order of S-Band Doppler Weather Radar (Klystron Based) (Dual Pol) or X/C/S Band Doppler Weather Radar (Dual Polari metric) (SSPA/Klystron Based) or Doppler Weather Radar only (despite of any band and transmitter type) | Shall be read as "bidders should have proven capability of successful manufacturing, supply and commissioning of Doppler Weather Radars".   |



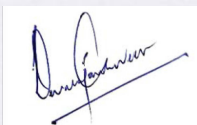

|    |                               |  |   |  |   |
|----|-------------------------------|--|---|--|---|
| 25 | POLLUTION EQUIPMENT & CONTROL |  | Chapter 2 Para 5<br>Qualification criteria for Bidders: Eligibility | The given requirement and specification can be met by proven manufacturers who are based outside India, hence to put this procurement under Make in India is prohibiting from showcasing the proven and reliable solution. Hence it is urged to change the procurement mode from MII to Global for better and quick delivery and also to have proven system rather experimenting with such a complex product and solution. | As per make in India policy of Government of India, the bidder shall be a weather radar manufacturer in India or shall have arrangements with foreign collaborators with phased indigenization as per DIPP OM No. P-45021/2/2017-PP (BE-II) dated 4th June 2020" and subsequent amendments from time to time. |
| 26 | POLLUTIN EQUIPMENT & CONTROL  |  | Chapter 2 Para 5<br>Qualification criteria for Bidders: Eligibility | It is imperative that the OEM has to be involved in the process of execution of project, under the current tender all the onus on the local supplier, in the event of any break in understanding with OEM, how IMD is going to address such a situation, if it is Global mode, then the procurement process is fully controlled and also IMD can be assured of its timely execution in most professional manner.           | As per make in India policy of Government of India, the bidder shall be a weather radar manufacturer in India or shall have arrangements with foreign collaborators with phased indigenization as per DIPP OM No. P-45021/2/2017-PP (BE-II) dated 4th June 2020" and subsequent amendments from time to time  |
| 27 | POLLUTION EQUIPMENT & CONTROL |  | NIL   | All the activities that has been listed or enumerated in the RFP can be achieved systematically provided there is continuous engagement of OEM.  | Such provisions are well defined in tender document as per DIPP OM No. P-45021/2/2017-PP (BE-II) dated 4th June 2020" and subsequent amendments.  |
| 28 | POLLUTION EQUIPMENT & CONTROL |  | Chapter 2 Para 20<br>Terms and Mode of Payment:                     | Payment terms are not realistic and with components and other equipment prices are skyrocketing and also the logistics prices have also become like a commodity market, fluctuating every day, it is near to impossible to hold the prices till the  | As per tender document.   |





|    |                               |         |   |   |  |
|----|-------------------------------|---------|---|---|--|
|    |                               |         |   | <p>execution of contract. Because of these unforeseen situations, whereas the OEM has the flexibility of availability or sourcing the parts in large numbers, hence these prices can be better controlled rather putting the onus on local company since the financial exodus would be tremendous. Hence the payment terms are not favorable.</p> |  |
| 29 | POLLUTION EQUIPMENT & CONTROL |         | Chapter 2 Para 12<br>Delivery schedule:   | <p>Current global situation of component and other equipment availability, the delivery timeline as envisaged in the RFP is also not achievable; the standard delivery timeline has to be 12-14 months for the delivery of Radar.</p>   | <p><b>Chapter-3, Para 18. Delivery Schedule, a:</b> may be read as "First radar to be installed, accepted and commissioned within 18 months from the date of issue of contract agreement. Rest of the radars shall be delivered, installed and commissioned within 22 months from the date of issue of contract agreement in a phased manner. In this regard the contractor will submit the actual schedule along with time line for execution of installation and commissioning work for each radar."<br/><b>Chapter-3, Para 18. Delivery Schedule, a(i):</b> may be read as "Supply of all stores (for first radar) at site within a period of 15 months from issue of contract agreement."<br/><br/>Rest items of Chapter-3, Para 18. Delivery Schedule remains same.</p> |
| 30 | SGS                           | Page 52 | PROJECT SCHEDULE<br>i. Supply of all stores (for first radar) at site within a period of 10 months from issue of contract agreement | <p>The given timeline is very restrictive and short. Execution of a project of this magnitude with Klystron requires long delivery schedule.</p>  | <p><b>Chapter-3, Para 18. Delivery Schedule, a:</b> may be read as "First radar to be installed, accepted and commissioned within</p>  |





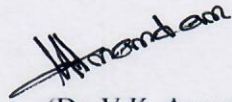

Wimmer 8  
wimmer



|  |  |  |  |   |   |
|--|--|--|--|---|---|
|  |  |  |  | <p>It can be appreciated that Klystrons are manufactured against order for which delivery schedule is minimum 13 months. This being a turnkey project, we request you to kindly amend the delivery schedule as <b>commissioning of first radar is 21 months and 36 months for all the radars</b>, in consideration of long gestation for Klystron availability.</p> | <p>18 months from the date of issue of contract agreement. Rest of the radars shall be delivered, installed and commissioned within 22 months from the date of issue of contract agreement in a phased manner. In this regard the contractor will submit the actual schedule along with time line for execution of installation and commissioning work for each radar.</p> <p><b>Chapter-3, Para 18. Delivery Schedule, a(i):</b> may be read as "Supply of all stores (for first radar) at site within a period of 15 months from issue of contract agreement."</p> <p>Rest items of Chapter-3, Para 18. Delivery Schedule remains same.</p> |
|--|--|--|--|---|---|



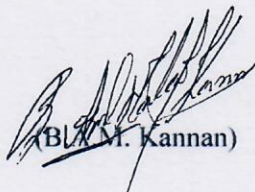
(Dr. D. Preveen Kumar)



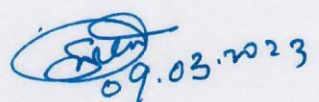
(Dr. V.K. Anandan)



(Gajendra Kumar)



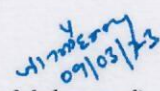
(B.M. Kannan)



(Dr. Sankar Nath)



(Sanjay Bist)



(Jan Mohmmad)