

Technical cum PQQ Evaluation Report

EOI (Domestic) for "SUPPLY, TESTING & TRAINING OF QTY-01 RADAR DATA ANALYSIS TOOL AT ANNA INTERNATIONAL AIRPORT, CHENNAI under "Make-In-India" policy of Government of India"

EOI No.: AAI/CNS-OM/01/2021-22

The committee comprising of following members was constituted by the competent authority for the Technical cum PQQ (Pre-Qualification Questionnaire) evaluation of Bids for EOI for SUPPLY, TESTING & TRAINING OF QTY-01 RADAR DATA ANALYSIS TOOL AT ANNA INTERNATIONAL AIRPORT, CHENNAI under "Make-In-India" policy of Government of India.

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|------------------------------|--------------------|
| 1. Sh. Sharad Chandra Dubey, | AGM(CNS) |
| 2. Sh. Virendra Yadav, | AGM(CNS) |
| 3. Mrs. Tanuja Agrawal, | Mgr. (Finance)-ANS |

The bids of following bidders are received in response to the EOI as mentioned above.

1. M/s Bharat Electronics Limited(BEL) Ghaziabad
2. M/s Hensoldt Private Limited

The constituted committee scrutinized the Technical cum Pre-qualification documents submitted by the bidders on CPP portal. After preliminary evaluation queries were raised i.r.o. shortfall of documents for each of the bidders. Response from the bidders to the queries were evaluated.

Based on the documents submitted by M/s BEL and M/s Hensoldt the observations of the committee are as follows.

M/s BEL:

1. M/s BEL has participated as Class-I manufacturer(OEM). However, details of price breakup as "Local component" and "Imported component" as well as certificate from the statutory auditor or cost auditor of the company certifying that bidder meets the mandatory local content percentage requirement of the project are not submitted by M/s BEL.
2. M/s BEL has not executed any contract for supply of 'Radar Data Analysis Tool' in the past but claims that equipment with part of the required specifications has been manufactured and different variant of equipment has been supplied to Indian Airforce (Military ANSP). However, no supporting documents have been submitted.
3. M/s BEL has claimed to comply all the operational and technical requirements of 'Radar Data Analysis Tool', but has not submitted any documentary proof regarding the equipment. M/s BEL has stated (without any documentary proof) that it has supplied equipment to IAF with part of AAI specifications. M/s BEL has not submitted technical document of its equipment(s) containing EOI's operational and technical requirements of 'Radar Data Analysis Tool'.

M/s Hensoldt:

1. M/S Hensoldt has participated as an authorized representative/dealer of OEM M/S Intersoft Electronics N V, Belgium.

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2. The Equipment to be supplied by the bidder M/s Hensoldt is fully manufactured and developed outside India by M/s Intersoft Electronics NV (OEM) Belgium. The Bidder M/S Hensoldt has not submitted any document in support of class of vendor under Make in India policy.
3. The bidder M/s Hensoldt has not submitted any document in support of supply of 'Radar Data Analysis Tool' to any entity in last 7 years but has submitted letter from OEM M/S Intersoft Electronics NV claiming that M/s Intersoft Electronics NV has supplied and successfully executed more than 190 work orders of 'Radar Data Analysis tool' to different entity/organizations. However, the OEM has denied to disclose the details of the work orders due to confidentiality clause.
4. The bidder M/s Hensoldt has submitted annual balance sheet for the year 2018-19 & 2019-20. The bidder has not submitted the balance sheet of last financial year i.e. 2020-21. The bidder has also submitted the balance sheet of OEM M/s Intersoft Electronics NV, but same is not readable as it is in foreign language.

In view of the forgoing, the committee is of the opinion that bids submitted M/s BEL and M/s Hensoldt do not meet all the EOI requirements.

for financial post only
Tanujabul
 23.12.2021
 (Tanuja Agrawal)

Mgr(Finance)-ANS

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 23/12/2021
 (Virendra Yadav)

AGM(CNS)

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 23/12/2021
 (Sharad Chandra Dubey)

AGM(CNS)

PQQ Evaluation Report				
EOI (Domestic) for: ' SUPPLY, TESTING & TRAINING OF QTY-01 RADAR DATA ANALYSIS TOOL AT ANNA INTERNATIONAL AIRPORT,CHENNAI under “Make-In-India” policy of Government of India'				
EOI No.: AAI/CNS-OM/01/2021-22				
Sl. No.	Criteria	EOI Clause	Name of Bidders	
			M/s BEL(1/2)	M/s HENSOLDT (2/2)
	Value / Quantity Criteria:			
1	The bidder shall have successfully executed orders conforming to any one of Value Criteria or Quantity Criteria listed below, for supply of Radar Data Analysis Tool with similar or better specifications during last SEVEN YEARS. The bidder shall submit copies of relevant Purchase Orders as proof of experience of works claimed by him under this Para. Value Criteria One Work Order of value equal to INR xx.xx Crores (i.e. 80% of estimated cost as submitted by vendor) or more OR Two separate Works Orders, each for a value equal to INR xx.xx Crore (i.e. 50% of the estimated cost as submitted by vendor) or more OR Three separate Work Orders, each for a value equal to INR xx.xx Crore (i.e. 40% of the estimated cost as submitted by vendor) or more Quantity Criteria One order of supply of one Radar Data Analysis Tool equipment or more of the quantities tendered.	3.1.1 (refer page 14 of EOI Document Published)	M/s BEL has not executed any contract for supply of 'Radar Data Analysis Tool' in the past.	M/s Hensoldt has not submitted any document in support of execution of any order for supply of 'Radar Data Analysis Tool'

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2	Average Annualized Financial Turnover: Vendor should have annualized average financial turnover of at least 30% of the estimated cost or equivalent during last 3 years ending 31st March of previous financial year. As a proof of financial turn over, copy of abridged Balance Sheet along with profit & loss account of the Firm for the last three years should be submitted.	3.1.2 (refer page 14-15 of EOI Document Published)	M/s BEL has submitted balance sheet for the last 3 years. The average annualized turnover for last 3 years is Rs. 12,73,828 Lacs. Budgetary Estimate quoted by M/s BEL is Rs. 8,85,00,000/ (including taxes) .	M/s Hensoldt has submitted annual balance sheet for the year 2018-19 & 2019-20. The bidder has not submitted the balance sheet of last financial year i.e 2020-21. The average annualized turnover for the year 2018-19 & 2019-20= Rs. 6,82,99,891 Budgetary Estimate quoted by M/s Hensoldt is 1. Rs. 6,85,22,000/. (Training at AAI site Chennai) OR 2 Rs . 6,48,28,500/ (Training at Belgium in OEM M/s Intersoft Electronics NV Factroy)
	Note:(i) The Firm should submit brief details of the Category of their Firm regarding OEM / Technical collaboration of foreign OEM/ Joint Venture / Authorized Dealer or Distributor/Indian subsidiary and specify whether Class – I Local Supplier or Class-II Local Supplier with Percentage of Local Content. The documentary proof may be submitted.		Bidder Claims to be under OEM Class-I but no document submitted in support of it.	M/S Hensoldt has participated as an authorized representative /dealer of OEM M/S Intersoft Electronics N V, Belgium.
	(ii) The 'Class-I local supplier/Class-II local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content. Refer Para 9 (b) of Annexure-V.		Bidder Claims to be under OEM Class-I but no document submitted in support of it.	M/S Hensoldt has participated as an authorized representative/dealer of OEM M/S Intersoft Electronics N V, Belgium.

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	(iii) a) Indian Manufacturing firms (OEM) should submit experience certificate & annual turn-over of their own firm. b) Joint Venture/Firms with technical collaboration of foreign OEM/Indian Subsidiary Company of Foreign Manufacturer/ Authorized suppliers / should submit annual turn-over and experience certificate of both (own firm & their OEM)		OEM Annual Turnover statement: M/s BEL has submitted the annual turnover statement. Experience Certificate: M/s BEL has not executed any contract for supply of 'Radar Data Analysis Tool' in the past.	Authorised Dealer of OEM M/s Intersoft Electronics NV Annual Turnover statement: The bidder M/s Hensoldt has submitted annual balance sheet for the year 2018-19 & 2019-20. The bidder has not submitted the balance sheet of last financial year i.e 2020-21. The bidder has also submitted the balance sheet of OEM M/s Intersoft Electronics NV but the Annual turnover statement of M/s Intersoft Electronics NV is not readable as it is in foreign language. Experience Certificate: The bidder M/s Hensoldt has not submitted any document in support of supply of 'Radar Data Analysis Tool' to any entity but has submitted letter from OEM M/S Intersoft Electronics NV claiming that M/s Intersoft Electronics NV has supplied and successfully executed more than 190 work orders of 'Radar Data Analysis tool' to different entity/organizations. However the bidder has not submitted any supporting document regarding execution of work order by OEM due to confidentiality clause.
3	Information regarding details of Indian Manufacturers Firms (OEM) /Technical collaboration of foreign firms/Joint Ventures/ Indian Subsidiary Company/Authorized Dealers/Distributors in Annexure-I.	3.2 (refer page 15 of EOI Document Published)	Submitted OEM	Submitted Authorised Dealer of OEM M/s Intersoft Electronics N V, Belgium.
4	Annexure-I		Submitted	Submitted
5	Annexure-II		Submitted	Submitted

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EOI (Operational and Technical Requirement for RADAR DATA ANALYSIS TOOL)

Sl. No.	Specification	M/s BEL	M/s HENSOLDT Pvt. Ltd.
1	State of the art technology shall be deployed in the equipment for the system offered and all designs, materials, manufacturing techniques and workmanship shall be in accordance with the highest accepted international standards for this type. The kit shall boast of programmable hardware using software virtual instrument.	*Not Complied	Complied
2	The kit shall have Graphical user interface installed on a PC workstation for controlling, measurement, status monitoring & management purpose.	*Not Complied	Complied
3	The kit shall have Online Help functions for setup and use of the equipment.	*Not Complied	Complied
4	Provision shall be there in the kit for logging and retrieval of all measurement.	*Not Complied	Complied
5	Provision of Report printing, status print shall be there in kit.	*Not Complied	Complied
6	The kit shall be capable of SSR/PSR Horizontal/vertical Polar diagram transmission pattern measurement.	*Not Complied	Complied
7	The kit shall boast of features to carry out different type of PSR/MSSR Radar receiver measurements, in order to investigate:	*Not Complied	Complied
	• RF receiver dynamic range	*Not Complied	Complied
	• Noise level measurement (sensitivity)	*Not Complied	Complied
	• Receiver alignment (SUM, DELTA, SLS) for monopulse SSR systems	*Not Complied	Complied
	• Receiver bandwidth	*Not Complied	Complied
	• STC, GTC curves	*Not Complied	Complied
	• Sectorial STC, GTC.	*Not Complied	Complied
8	The kit shall have capability of Vector Network Analysis and Pulse Vector Voltmeter function.	*Not Complied	Complied
9	Provision shall be there to Record Downlink antenna diagram of (M)SSR/PSR .	*Not Complied	Complied
10	Provision shall be there for Recording and analysis of Radar Video data.	*Not Complied	Complied
11	Kit shall be capable of		
	i)Evaluating the mechanical and structural design of the antenna support and tower under wind-loads, temperature, etc.	*Not Complied	Complied
	ii)Measuring the quality of the encoder system	*Not Complied	Complied
	iii)The levelling of the platform	*Not Complied	Complied

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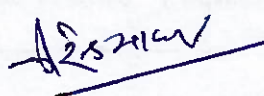
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	iv) Antenna start-up and stop are also to be recorded and provide information about the mechanical stiffness of the radar tower.	*Not Complied	Complied
12	The kit shall be capable of Passive or active recording and playback of radar data.	*Not Complied	Complied
13	Provision of local plot and track analysis shall be there.	*Not Complied.	Complied
14	Kit shall be capable of RF target injection with full scenario control for testing both PSR MSSR.	*Not Complied	Complied
15	Kit shall be capable of On-site performance checks of MSSR and primary radars in L and S band.	*Not Complied	Complied
15.1	During on site performance check RADAR shall remain operational.	*Not Complied	Complied
15.2	Measuring the Antenna System: Kit shall be Capable of measuring the transmission pattern (power) of the LVA or Horn-feed antennas and plotting versus azimuth or time.	*Not Complied	Complied
15.3	A log-periodic antenna with suitable frequency range and gain shall be delivered with the kit, along with all required accessories for picking up/Radiating RF emission from RADAR under test.	*Not Complied	Complied
16	The kit shall have following capabilities:	*Not Complied	Complied
	• To generate Uplink (transmission) antenna diagram: Pulse power vs f(Azimuth)	*Not Complied	Complied
	• Generation of test pulses for downlink (reception) antenna Diagram: Received Pulse power vs f (Azimuth)	*Not Complied	Complied
	• Feature for receiver measurements: Rx sensitivity sweeps, Rx bandwidth sweeps and (sectorial) STC or DSTC sweeps.	*Not Complied	Complied
	• Feature to measure Transmitter power, spectrum analysis, pulse shape recording, timing, mode and stagger verification.	*Not Complied	Complied
	• FRUIT generation for environment simulation	*Not Complied	Complied
	• ADS-B scenario generation capability.	*Not Complied	Complied
	• Mode-S interrogation generator for transponder verification.	*Not Complied	Complied
	• Capability for assessing transponder quality verification.	*Not Complied	Complied
	• Target injection for non-pulse-compression primary radars	*Not Complied	Complied
	• Remote Field Monitor function for SSR (A/C)	*Not Complied	Complied
	Kit shall have the capability, to measure PSR Horizontal Polar Diagrams as well to verify some PSR specific parameters of the antenna:	*Not Complied	Complied
	• Reflections	*Not Complied	Complied
	• RPM stability measurements.	*Not Complied	Complied

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Typical errors which can be found with the help of kit in PSR HPD curves must include radome influence on beamwidth and sidelobe anomalies.	*Not Complied	Complied
Kit shall have capability to generate vertical polar diagram & coverage diagram & related measurement:	*Not Complied	Complied
Kit shall have following feature:		
• OBA (Off Boresight Angle, error curve) recording.	*Not Complied	Complied
• Vertical polar diagram measurement.	*Not Complied	Complied
• Antenna gain measurement.	*Not Complied	Complied
• Logging of "raw video data", synchronous responses, PPI view of selected transponder.	*Not Complied	Complied
• Using kit, it shall be possible to construct Coverage diagrams from the VPD data.	*Not Complied	Complied
• Kit shall be capable of Software simulation of changes in applied tilt, Tx power, antenna gain etc...	*Not Complied	Complied
• The kit shall be capable of automatic measurement of primary Vertical Polar Diagrams on an operational PSR.	*Not Complied	Complied
• The system shall have the capability to sample the noise of the sun and stores the information together with its azimuth and elevation position. Post-analysis of the data shall calculate VPD and coverage diagrams from the logged "solar blips".	*Not Complied	Complied
Kit must be capable of :		
• Absolute sensitivity check-up of complete radar system including antenna chain;	*Not Complied	Complied
• Vertical Polar Diagram of PSR antenna;	*Not Complied	Complied
• Coverage diagram of PSR;	*Not Complied	Complied
• Software simulation of changes in applied tilt, Tx power, Target effective cross section area, Antenna gain etc...	*Not Complied	Complied
• Kit shall have Capability to Calculate the electrical tilt of the antenna based on the solar data.	*Not Complied	Complied
System shall have the capability to inject RF power at the RADAR receiver input and measures the resulting output voltage at the log receiver video output.	*Not Complied	Complied
The measurements must be synchronous to the interrogation trigger, for instance provision shall be there to set the test pulse at the end of the range, or to avoid STC, or in fact to be able to set the delay of the test pulse to measure the STC.	*Not Complied	Complied
Receiver Calibration		



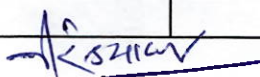

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	Kit shall have the capability to generate RF pulses at a selectable delay after the interrogation trigger and to inject a selectable pulse width in the radar receiver. Provision of decreasing power level of the RF pulses from a selectable maximum (up to +10dBm) in order to measure the receiver range going from saturation level down to the receiver's noise floor shall be there. For (M)SSR provision shall be there to measure three monopulse channel separately and displayed in overlay to check for channel alignment.	*Not Complied	Complied
	Bandwidth Calibration		
	Kit shall be able to generate test pulse with fixed or varying amplitude and selectable frequency to be used as RF source for bandwidth calibration.	*Not Complied	Complied
	Kit must boast of Remote Field Monitor Function		
	The Remote Field Monitor function shall mimic the behavior of an SSR (Mode 1, 2, 3, A, C) transponder. The tool must have monitoring functions, programmable power and range, and the possibility to load and create scenarios, so that SSR target can therefore be positioned at any range or follow a predefined range versus time trajectory.	*Not Complied	Complied
17	Kit must consist of Signal Generator with capability to generate a frequency range from 900 MHz to 3.5 GHz	*Not Complied	Complied
18	Kit must be capable of extracting antenna diagram for different radars at any time (e.g. multiple SSRs on one site) by means of the analysis software.	*Not Complied	Complied
19	The kit must be capable of generation & measurement of Downlink (Rx) antenna diagram by tapping to the receiver of the radar under test and the Signal Generator, mentioned in 17, set-up in the field, producing test pulses at a selected frequency. This recording must be slaved to the antenna rotation.	*Not Complied	Complied
20	Kit must boast of Data acquisition engine with DSP processing and USB2 interface for direct spooling of the captured pulse data to disk/storage device for later analysis. This mechanism must enable a 'one button' semi-automated measurement approach.	*Not Complied	Complied
21	Kit must have capability to generate very high number of targets. Above 2000/Scan	*Not Complied	Complied
22	Kit must boast of multiple number of target generation channels. At least 4	*Not Complied	Complied
23	Kit must have capability to generate FRUIT. Above 20000 FRUIT/sec per channel	*Not Complied	Complied
23	Radar Environment Simulator of the kit shall be capable of operating in master or slaved mode to radar rotation: 12, 14 or 16 bit ACP In and Output; Differential ACP/ARP provided	*Not Complied	Complied
24	Target Types	*Not Complied	Complied

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25	Kit shall boast of transponder programmable for Mode A,C,S and Inter mode. Support DF 4,5,11,17,18,20 and 21 Roll call replies for all target	*Not Complied	Complied
26	Kit shall be capable of data link Comm A, AICB, Broadcast Comm B, Resolution Advisories: Up to 32 BDS registers/target (programmable contents)	*Not Complied	Complied
27	Kit shall be capable of -DF17, 18, 19 and ADSB ES1090 reply generation.	*Not Complied	Complied
28	Kit shall be capable of Simulation of straight fights, turns, accelerations, climbs/descends, static targets, accelerated turns, etc.	*Not Complied	Complied
29	Kit shall be capable of Simulation of reflections through Map editor.	*Not Complied	Complied
30	Kit shall be capable of Simulation of Moving Radar.	*Not Complied	Complied
31	Kit shall be capable of Simulation of ADS B targets	*Not Complied	Complied
32	Kit shall have feature for Simulation of multiple radar (on RF or ASTERIX)	*Not Complied	Complied
33	Kit shall have feature for Programmable Mode S address, 3/A codes per target , in fight Code changes, generate emergency codes, SPI, etc.	*Not Complied	Complied
34	Kit shall have feature for Correct Mode C (and DF5/21) Altitude codes according to scenario.	*Not Complied	Complied
35	Kit shall be capable of performing programmable Down link Data link activities ((Broadcast Comm B, AICB, ACAS RA, Comm D)	*Not Complied	Complied
36	RECORDING		
36.1	Provision of recording of rotation Data, target data, status data etc. shall be there.	*Not Complied	Complied
36.2	Kit shall be able to record Interrogation schedules.	*Not Complied	Complied
37	Analysis		
37.1	-Provision for analysis of Accuracy, Resolution behavior, Pd, Sensitivity, etc. shall be inbuilt.	*Not Complied	Complied
37.2	-Kit shall be capable of analyzing Mode S data link behavior.	*Not Complied	Complied
37.3	Kit shall have feature to analyze Interrogation Schedules.	*Not Complied	Complied
38	Kit must have following features in terms of Transmitter ,		
38.1	Frequency Range 900 MHZ to 3.5 GHZ	*Not Complied	Complied
38.2	Amplitude typical RCS -40... + 20 DBZ	*Not Complied	Complied
38.3	On/Off Dynamic Range > 70 DB	*Not Complied	Complied
38.4	Doppler variation 0.. 50 KHZ	*Not Complied	Complied
39	Kit must have following features in terms of Test receiver		
39.1	Frequency Range: 900 MHZ to 3.5 GHZ	*Not Complied	Complied
39.2	Sensitivity Amplitude Detector:		




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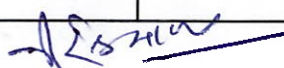
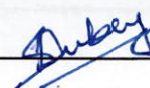
	-50 dbm	*Not Complied	Complied
39.3	Phase Detector :		
	0.. 180 Degree	*Not Complied	Complied
40	Kit must boast of capability to introduce OPTIONAL Optical Delay		
40.1	Delay: 0 .. 250 Micro Second	*Not Complied	Complied Optical Delay line available as an option. (Not included in the offer)
41	Radar RF test set		
	Kit shall boast of RF test set, so that possible error can be measured for Antenna, cable, circulator, rotary joint, • Having feature of Vector Network Analysis function for LVA near field antenna measurement to identify faulty antenna columns . Boasting dual channel L-S band Rx system 900MHz-3500MHz Key feature of kit for measuring RF parts: Kit shall allow pinpointing of the problematic areas in the antenna. transmitter. The unit shall be capable of measuring both amplitude and phase relation of a device under test connected between the input and output port and present a time domain or system response curve. • Capable of General Vector Network Analysis (VNA): Measurement of VSWR, Reflective power, Forward and Reverse transmission .	*Not Complied	Complied

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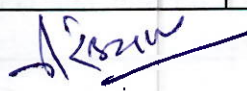
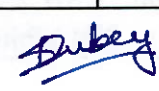
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	Capability of far field antenna pattern simulation from measured LVA tapering table . Kit shall have features of Pulse Vector Volt meter . • Provision to carry out IQ alignment measurement for PSR receivers . Vector Network Analysis function shall consist of, - LVA column fault finding. • To measure the RF parts of the radar chain: Rotary joint: leakage, reflections, loss. • Identifying problem related to Low loss cables: VSWR, Loss, Cable damage . • Identifying problem related to Monopulse cables: Phase alignment Splitters, couplers, switches, etc... Kit must be capable of finding following errors - Rotary joint HF-faults (SWR, reflections, impedance mismatch, etc.) • Transmission cable faults (attenuation, reflections, impedance mismatch due to bending, etc.) • HF combiner (attenuation, reflections, impedance mismatch, etc...) errors. Kit must be capable of measuring accurately the difference in amplitude and phase between two pulsed signals. The tool shall allow compensating for cable lengths and attenuation by performing a 'relative' or 'absolute' reference measurement.		
41.1	The kit shall consist of two identical programmable transmitters RF output Ch1 and Ch2	*Not Complied	Complied
41.2	Transmitter Frequency Range :		
	700 to 3500 MHZ programmable frequency synthesizer stabilized, Accuracy 100 KHZ.	*Not Complied	Complied
41.3	Transmitter Frequency step size :	*Not Complied	Complied
	125 KHZ or less	*Not Complied	Complied
41.4	Max Transmitted Power:	*Not Complied	Complied
	700 to 3500 MHZ: < 10 dbm	*Not Complied	Complied
		*Not Complied	Complied
41.5	Modulation Range : 60 db	*Not Complied	Complied
41.6	Frequency Range : 700 to 3500 MHZ	*Not Complied	Complied
41.7	Linear sensitivity : -20 .. -80 dbm	*Not Complied	Complied
41.8	Log sensitivity : -10 .. -80 dbm	*Not Complied	Complied
	Interfaces		
41.9	USB interface : For remote programming and high speed data throughput , USB 2 : 480 Mbits/s transfer rate combatable with USB 1 : 480 Mbits/s transfer rate	*Not Complied	Complied

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####	Analog interface :	*Not Complied	Complied
	Ch1 Video input to acquisition system	*Not Complied	Complied
	Ch2 Video input to acquisition system	*Not Complied	Complied
	Ch3 Video output from the Receiver	*Not Complied	Complied
	Ch4 Video output from the Receiver	*Not Complied	Complied
41.1	RF interface : BNC Female TX RX 50 Ω	*Not Complied	Complied
42	Recording & Analyzing Function		
42.1	Both the video input and the resulting processor data output need to be recorded. Additionally kit should have capability to emulate the plot extraction process and comparing with the radar output	*Not Complied	Complied
	The kit shall have atleast 2 serial communication channels for active and passive recording capable of handling transmission speeds up to 128 Kb/s.	*Not Complied	Complied
	The recording system shall support RS232 (single ended) and RS422 (differential) standards.	*Not Complied	Complied
	A whole range of synchronous protocols shall be supported and other can be programmed upon request.	*Not Complied	Complied
	The recording system shall be able to record all types of PSR, SSR or Mode-S radar video signals.	*Not Complied	Complied
	The kit must boast of atleast 6 video signals (software selectable), 2 trigger signals and 2 rotation interfaces (ACP and ARP signals, both single-ended and differential) so that One can connect up to 6 video signals to the recording system.	*Not Complied	Complied
	The kit shall allow connecting for instance both SSR channels or a combination of PSR/SSR video.	*Not Complied	Complied
42.2	The kit shall support following passive protocols (at least up to 128 Kb/s) :	*Not Complied	Complied
	U-HDLC: passive recording of HDLC based protocols, including LAP-B and X25.3 passive monitoring. (eg.ASTERIX, RDIF)	*Not Complied	Complied
	SYNC 13: Passive recording of most bit protocols as implemented on US radars (CD1, CD2, ASR9, etc ...)	*Not Complied	Complied
	AIRCAT500 - EV760 - TVT 2 - EADS - RSRP - TPS 77 - RAT31	*Not Complied	Complied
42.3	The kit shall be capable of providing as output, the following passive protocols : U-HDLC – TVT 2 – AIRCAT500	*Not Complied	Complied
42.4	The following protocols shall be recorded and replayed bitwise using kit : AUSTRO – BMIL – CD – ERICSSON 200/SRT – EUROCONTROL – FPS 117- HUGHES – RAT31S – SVE –TOSHIBA –TRS 22xx	*Not Complied	Complied
43	General Specifications of Kit interfaces :		

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	Shall boast of atleast 2 no. ARP/ACP inputs over BNC connectors, single ended TTL and 2 no. ARP/ACP inputs: preferably DB9 female connector, differential TTL.	*Not Complied	Complied
	Shall come equipped with GPS interface for time stamping: dedicated interface to GPS receiver.	*Not Complied	Complied
	Shall boast of atleast 2 Trigger inputs: preferably BNC connectors, TTL	*Not Complied	Complied
44	Data Recording interfaces features:		
	Shall boast of atleast 2 no. Synchronous serial data inputs/outputs: female DB15connector, RS232/RS422 Driver/Receiver	*Not Complied	Complied
	Shall boast of USB 2.0 or higher data connection to processing pc.	*Not Complied	Complied
44.1	Provision of at minimum 4 Analog input Channels: BNC connectors, Analog input Voltage = $[-2v \dots +2v]$, $10\text{ k}\Omega$	*Not Complied	Complied
44.2	Kit shall boast of I / Q analog input channels: BNC connectors, Analog input voltage= $[-2v \dots +2v]$, $10\text{ k}\Omega$	*Not Complied	Complied
44.3	Kit shall be Capable of Sampling rate: 8MHz (2channels)/16MHz (1channel)	*Not Complied	Complied
	ADS-B Receiver		
45	Kit Shall consist of GPS receiver :		
	Weatherproof GPS receiver for UTC time stamping of messages	*Not Complied	Complied
46	Kit shall consist of a portable ADS-B receiver with software tools, shall be delivered with 30 meter of low-loss coax cable.	*Not Complied	Complied
47	Kit shall come with portable outdoor antenna : Omnidirectional, 2 elements Bandwidth: 1070 to 1110 Mhz; Gain = 5 DB +/- 0.5 DB N female connector Pre amplifier and filter	*Not Complied	Complied
48.2	Kit for syncing extracted data with GPS time stamp : Perform ADS B Extraction+ GPS Connection for UTC Time of detection	*Not Complied	Complied
49.1	The kit shall come with HMI Installed on portable or desktop computer: Kit shall be capable to process the data in ASTERIX CAT021 messages, with output to Ethernet and recording & replay	*Not Complied	Complied
49.2	Kit shall be capable of Multi Radar Display (at least 3 sensor) : to display ADS-B data in overlay with PSR/SSR/Mode-S data	*Not Complied	Complied
49.3	Kit shall have feature of Radar Comparator Mono/Dual: for performance analysis, in combination with digital terrain elevation data (Coverage Map Calculator	*Not Complied	Complied
49.4	Kit shall have feature of Inventory tool: for trend analysis of the processed data	*Not Complied	Complied
50	Technical details of kit		
50.1	Maximum input power (no damage): 10dBm Operating frequency: 1090MHz, bandwidth 10MHz	*Not Complied	Complied
50.2	Dynamic Range: at least 60dB	*Not Complied	Complied
50.3	Operating Temperature: -40deg/+60deg	*Not Complied	Complied

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50.4	RF Input: SMA to SMA-female (to antenna preamplifier)	*Not Complied	Complied
50.5	Video output: N female, 0-2V,	*Not Complied	Complied
50.6	Power supply: 15V (DB15 connector), external power supply.	*Not Complied	Complied

Note: * 1. As per documets submitted, M/s BEL has not executed any contract for supply of 'Radar Data Analysis Tool' in the past.

2. M/s BEL has not submitted technical document of its equipment(s) containing EOI's operational and technical requirements of 'Radar Data Analysis Tool'/ Documents submitted by M/s BEL have too much limited contents for the evaluation.

dfz 21/12

Dubey

Technical cum PQQ- preliminary evaluation Report

EOI (Domestic) for "SUPPLY, TESTING & TRAINING OF QTY-01 RADAR DATA ANALYSIS TOOL AT ANNA INTERNATIONAL AIRPORT, CHENNAI under "Make-In-India" policy of Government of India"

EOI No.: AAI/CNS-OM/01/2021-22

The committee comprising of following members was constituted by the competent authority for the Technical cum PQQ (Pre-Qualification Questionnaire) evaluation of Bids for EOI for SUPPLY, TESTING & TRAINING OF QTY-01 RADAR DATA ANALYSIS TOOL AT ANNA INTERNATIONAL AIRPORT, CHENNAI under "Make-In-India" policy of Government of India.

- | | |
|------------------------------|--------------------|
| 1. Sh. Sharad Chandra Dubey, | AGM(CNS) |
| 2. Sh. Virendra Yadav, | AGM(CNS) |
| 3. Mrs. Tanuja Agrawal, | Mgr. (Finance)-ANS |

The bids of following bidders are received in response to the EOI as mentioned above.

1. M/s Bharat Electronics Limited (BEL) Ghaziabad
2. M/s Hensoldt Private Limited

The constituted committee scrutinized the Technical cum Pre-qualification documents submitted by the bidders on CPP portal. The following shortfall of documents are observed in the preliminary evaluation.

M/s BEL:

1. The equipment proposed by M/s BEL seems to be prototype. This needs to be confirmed whether M/s BEL has manufactured the proposed equipment in past which meets all Operational and Technical Requirements mentioned in EOI. If yes, supporting documents are required to be submitted by M/s BEL.
2. Documents in support of supply of proposed equipment to any ANSP is required to be submitted by M/s BEL.
3. It may be confirmed from M/s BEL to demonstrate the functionality of the equipment, to meet the Operational and Technical Requirements, at any of the AAI airports.

M/s Hensoldt:

1. M/s Hensoldt has not submitted balance sheet for the financial year 2020-21 and the balance sheet of OEM M/s Intersoft Electronics NV, Belgium for last 03 years also needs to be submitted by the bidder M/s Hensoldt.
2. Documents in support of classification of bidder (as per Public Procurement policy order-2017- Revised on 04.06.2020) are required to be submitted by M/s Hensoldt.
3. The detailed technical manual/Brochure of the Equipment is required to be submitted by M/s Hensoldt.

Signature
07/10/2021

12-34152
07/10/2021

Dubey
07/10/2021

4. M/s Hensoldt has not submitted details regarding supply of the equipment to any ANSP as well as details of contracts received in the last 7 years. The details as well as the documents in support of the same is required to be submitted by M/s Hensoldt.
5. Supporting documents for the number of years of experience of the Bidder firm in the field of CNS/ATM equipment manufacturing/Supply is required to be submitted by M/s Hensoldt.

for financial part only
Tanuja Agrawal
01/10/2021
(Tanuja Agrawal)

Mgr(Finance)-ANS

Virendra Yadav
07/10/2021
(Virendra Yadav)

AGM(CNS)

Sharad Chandra Dubey
07/10/2021
(Sharad Chandra Dubey)

AGM(CNS)