Central radio Stores Depot,New Delhi

Five Year Procurement Plan (2021-22 to 2025-26)

Sr.No.	Year	Name of procurement project	Qty.	Items ro be procured or Broad Specifications	Estimated Value in INR with GST in Lakhs	Local Vendor (Make in India/MSME) is available or not. (Yes/No)	Remarks
1	2021-22	RF Signal Generators	6	Frequency (9KHz to 3GHz); Resolution (0.01Hz or better); Output Power @10MHz to 3GHz: +16.5 dBm to –110 dBm; Internal pulse generator Mode (Free-run, square, triggered, adjustable double pulse, gated, and external pulse); Phase [SSB Phase] Noise @ 20 KHz offset (-120 dBc/Hz @ 1 Ghz -115 dBc/Hz @2 to 3 Ghz)	100.21	No	Testing Purposes for operation and maintenance of Indra MSSR at six airports Vizag, Bhopal, Bellary, Jharsuguda, Katihar and Porbandar. Requirement of Dte. Of CNS-OM, CHQ.
2		NAV-Analyzer (ILS/VOR Signal Analyser)	20	ILS,VOR SIGNAL ANALYSER should have capability to measure various ground measurable parameters of Localizer(like modulation parameter ,ID, distortion ,frequency) ,Glidepath (like modulation parameter, distortion, frequency), Marker Beacon (like modulation parameter, ID, frequency) & VOR(like modulation parameter, frequency, FMI) as per Annexure 10 Volume I & DOC 8071 Volume I	633.71	No	Testing Purposes for operation and maintenance in Navigational Equipment (Localiser, Glide Path, VOR) installed at various Airports in India. Requirement of Dte. Of CNS-OM, CHQ.
Total Expenditure for Year 2021-22 (INR & Lakhs)					**733.92**		
3		Rectifier Module, 24V	25	output voltage range of 21.5-36VDC; load ranges 240W to 960W; AC/DC applications; DC/DC applications OR equivalent to AAI's part no. 74649	44.93	No	Supply of COTS Spares of ILS INDRA Navia AS (Normarc 7000B): For operation and maintenance of ILS INDRA Navia AS (Normarc 7000B) for various airports. Requirement of Dte. Of CNS-OM, CHQ.
4		Controller Module	7	Input Voltage (Tolerances: 17-75 VDC; Shutdown: < 15 VDC); Power Consumption (3W); Ethernet port (10/100 BASE-T,HP Auto MDI/MDI-X) OR equivalent to AAI's part no. 74650	9.05	No	
5		Surge Protection	20	Max. operating voltage (70V); Max. operating current @25°C (150 mA); DIN IEC 68 part 2-2/3 (thermal resistivity) OR equivalent to AAI's part no. 21880	3.44	No	
6		RF Splitter	8	2 Way-0° 50Ω 5 to 500 MHz; Power Input (as a splitter) 1W max.; Internal Dissipation (0.125W max.); insertion loss, 0.3 dB typ. OR equivalent to AAI's part no. 11533	4.38	No	
7		Co axial relay	7	OR equivalent to AAI's part no.RF Contacts (Break before make); Switching Time 20 msec max; OR equivalent to AAI's part no. 13124	16.48	No	
8		AC/DC Converter	2	Input voltage 230 and 115 VAC; Output voltage Power supplies 12 VDC; Output Current (5A) OR equivalent to AAI's part no. 23481	2.26	No	

9		A/D Converter	2	Single channel analog input; 8-bit CMOS microcomputer; Digital filtering; Events counter; Voltage levels: ±30V without damage; Switching levels: High, 3.5V min., Low, 1.0V max OR equivalent to AAI's part no. 23483	6.00	No	
10		Battery Protection	2	Battery Voltage 12V; Current Rating 10A; 10A models Fuse 10A, 20A models fuse 20A OR equivalent to AAI's part no. 23482	1.25	No	
11		Lightening Protector, IN LINE, 4 PAIR (IX-4L)	4	Clamping Voltage (12V); Surge (Telcordia GR-1089 10/1000uS 100 A or better); Max Holding Current (235-620mA over -40 to 65 °C temp range); Connector (Screw Terminal); Data Application (T1/E1, RS-232/422/485)	1.76	No	Supply of COTS Spares of ASMGCS: For operation and maintenance of ASMGCS for various airports. Requirement of Dte. Of CNS-OM, CHQ.
12		Lightening Protector, 24 VDC, 4 PAIR (IX-4DC24)	4	Clamping Voltage (33V); Surge (BELLCORE 1089 10/1000uS 100A or better); Max Holding Current (2.10 – 4.13 A over -40 to 65 °C temp range); Connector (Screw Terminal); Data Application (T1/E1, RS-232/422/485)	1.87	No	
13		Surge Arrestor/3Phase Fuse Bank(fuse Carrier)	5	All contact surfaces are silver plated; Fuse Type (Cylindrical 10 x 38); Number of poles(3+N); Rated operational voltage (690 V AC); Rated current (32A)	0.14	No	
14		Line Inductor	5	3 Phase; Watts Loss (40.9Watts); Inductance(2.1mH); Current Rating (11 Amps AC)	0.99	No	
15		Thermostat	3	Switch temperature difference 7K (±4K tolerance); Sensor element (thermostatic bimetal); Protection type (IP20)	0.47	No	
16		Circuit Breaker Assembly (CB2&CB3)	5	Thermal Rocker Actuated Circuit Breaker; Flange Mounting; 2-pole thermally protected;	14.87	No	
17		Gas Discharge Tube Lightning Arrestor(RU06)	5	N Connectors and a Replaceable Protective Element; DC to 3.2 GHz Excellent RF Performance; N-Male to N-Female; VSWR (1.15 to 1.35)	0.83	No	
18		COAXAL RF SURGE PROTECTION (Reftran)	5	Frequency Ranges from DC to 2.7 GHz; Connector N-Type Female to Female; RF Power (500/1000W)	1.56	No	
19		NMM2 module	3	Hot-swappable in 19-Module, 5-Module, or 2-Module Omnitron chassis; Utilizes IEEE 802.3ah OAM extensions and Omnitron's Secure OAM for IP-Less management	3.70	No	
20		GM3 modules	10	Network Interface Device for 1000Mbps and 100Mbps Carrier Ethernet Fiber Access; 802.1ad VLAN stacking (Q-in-Q) for E-Line and E-LAN service multiplexing	30.44	No	
21		LAN CARD INTEL PRO/1000MT SINGLE PORT SERVER	4	INTEL PRO/1000MT (P/N:PWLA9490MT) or compatible	1.49	No	
22		SMPS 320 W p/o workstation	60	HP-DPS-320-NB-1A (P/N: HP 611483-001)	21.70	No	
23		CISCO CATALYST 3750 SWITCH 48 PORT with stacking cable & CBL equipped stacking stackwise = 1MT for VCS OR CISCO CATALYST SWITCH 3850 SWITCH 48 PORT WITH STACKING CABLE	4	CISCO CATALYST 3750 SWITCH 48 PORT with stacking cable & CBL equipped stacking stackwise = 1MT for VCS or CISCO CATALYST 3750 SWITCH 48 PORT with stacking cable Or Upgraded version	19.99	No	
24		HP DMS-59 TO DUAL DISPLAY PORT Adapter	40	Product No-XP 688AA (P/N: 635428-001)	9.12	No	

25		KEYBOARD (ENGLISH)	40	KEYBOARD (ENGLISH) compatible with intel Core i3-2120 CPU @ 3.3.GHZ,	13.35	No	Supply of COTS spares of IATS Systems (ATS Simulator):For operation and maintenance of IATS Systems at Delhi, Mumbai, Kolkata & Chennai Airports. Requirement of Dte. Of CNS-OM, CHQ.
26		MONITOR LCD 22"(1920x1080)	36	MONITOR LCD 22" --Resolution : 1920x1080, HP ZR2240W (P/N 634347-701) / HP Z22i (P/N: D7Q14A4) or compatible having at least one Display (D) port.	22.49	No	
27		INTEL PRO/1000MT DUAL PORT SERVER ADA	16	INTEL PRO/1000MT DUAL PORT (P/N: PWLA8492MTBLK5) or compatible	8.47	No	
28		Sound card	16	XONAR DX PCIE LOW PROFILE 7.1 (P/N: XONAR DX/XD/A)	3.97	No	
29		MONITOR LCD 30"(1920X1080)	13	HP-ZR30w (P/N: 583095-001) or HP-Z30i (P/N: D7P94A4 D7P94AT)	46.03	No	
30		BIAURAL HEADSETS(CWP_EXECUTIVE) WITH PTT CABLE	120	SENNHEISER-HME 43-3 & SENNHEISER-PTT-USB-10D	154.89	No	
31		7-PORTS USB 2.0 HUB	40	D LINK-DUB-H7 (EUBH7EB) or compatible	3.33	No	
32		HP TFT7600 RCKMNT KEYBRD 17 IN INTL MONITOR FOR KVM SERVER CONSOLE SWITCH.	4	HP Model HP-AZ884A or compatible	4.55	No	
33		HP CATS0X2X8 KVM SERVER CONSOLE SWITCH	4	HP SERVER CONSOLE SWITCH (Model: HP AZ616A) or compatible	2.91	No	
34		PATCH PANEL 19" 24-PORTS CAT6 UTP	8	PATCH PANEL 19" 24-PORTS CAT6 UTP or compatible	2.67	No	
35		HP IP CONSOLE 8 PACK INTERFACE ADAPTER ADAPTATOR FOR KVM SERVER CONSOLE SWITCH	10	HP interface adapter (HP-262587-B21) or compatible	7.73	No	
36		500 GB SATA 7200 RPM Hard Drive	28	Capacity: 500 GB, Type of Drive: SATA,RPM: 7200	13.68	No	
37		250 GB SATA 7200 RPM Hard Drive	28	Capacity: 250 GB, Type of Drive: SATA,RPM: 7200	10.26	No	
38		300 GB 15 K SAS Hard disk	22	HP Model: EH0300FBQDD (P/N: 627114-002)	24.18	No	
39		NVIDIA Graphics Card	9	NVIDIA NVS 300 PCIex16 (P/N: 625629-001) or compatible model of NVIDIA	2.56	No	
40		Intel PCI Express single port Ethernet card (18 Pin)	11	Intel PCI Express (P/N: 635523-001) or compatiable	5.82	No	
41		RAID Controller MSA500 G2 (Hp Modular Storage Array) (HP)	1	1 x MSA 500 G2 Raid controller Ultra 320 con 256MB BBWB Cache - 2 x SA642 Ultra 320 PCI HBA 2 x 6ft SCSI cable- Eth. Cable - Red. fan - Red. Powe supply	0.94	No	Supply of COTS Spares of Leonardo (Selex) make E-AMSS, Automation unit & Radar system:For operation and maintenance of make E-AMSS, Automation unit & Radar system at HIAL & BIAL Airports. Requirement of Dte. Of CNS-OM, CHQ.
42		Micro Transreceiver	1	p/o PSR receiver. Power requirement 12Vdc, 300mA(max); connectivity technology-wired; Data link protocol- 10Mb LAN; Data transfer rate-10Mbps; IEEE 802.3 standard	0.81	No	
43		ENTERASYS SECURE STACK- B2	1	p/o network spares related to Radar head. Ports- 48 ethernet 10/100 Mbps 100 base T, One DB9, 4 SFP slot, fibre optic connection; Throughput capacity; VLAN; Routing protocols; Remote management protocol; communication mode	1.61	No	
44		Enterasys Matrix® N-Series Platinum DFE SLOT SWITCH	4	7C107 with 2 no. of DFE P/N: 7H4382-49 and 2 no.of NEW P/N: 7G-6MGBIC-A or equivalent & compatible part	49.03	No	
45		Enterasys Matrix® N-Series Platinum DFE SLOT SWITCH	2	7H4382-49 or equivalent & compatible part	4.53	No	
46		ENTERASYS B2 ethernet switch	4	B2H124-48 or equivalent & compatible part	6.44	No	
47		SMPS for HP ML350R G5 server	26	Model: DPS-800GB A, HP P/N: 379123-001 or equivalent & compatible part	9.97	No	
48		SMPS of HP Storage Works MSA2000	1	FRU No. 481320-001, Model YM2751B, P/No. CP-1391R2 or equivalent & compatible part	0.38	No	
49		3 POINT MOUSE	20	ASSY P/N : 361781-003 SPARES P/N : 389026-001 or equivalent & compatible part	3.68	No	

50		MEMORY CARDS	20	1GB, DDR2, 667,CL5,ECC or equivalent & compatible part	3.68	No	
51		KVM Console Switch, 1x8 Port (CAT5 based)	2	336044-B21 or equivalent & compatible part	5.06	No	
52		Entrasys switch power supply	4	6c207-3 or equivalent & compatible part	3.84	No	
		CALIBRATORS & REFERENCE STANDARDS (PRECISION TEST EQUIPMENTS)					
53		DC Voltage reference standard	1	Reference Standard Voltages: 10 V 1 year Standard Stability : ≤ ± 2 µV/V 1 V 1 year Standrd Stability : ≤ ± 3 µV/V 0.1 V 1 year Standrd Stability : ≤ ± 10 µV/V	48.39	No	
54		Multifunction Calibrator	1	DC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 45 µV AC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 560 µV DC Current range : 0 - 10A or better at 10 mA 1 year absolute uncertainty : ≤ ± 0.5 µA AC Current range : 0 - 10A or better at 10 mA 1 year absolute uncertainty : ≤ ± 2 µA Resistance range : 0 - 1 00 MΩ or better at 10 KΩ 1 year absolute uncertainty : ≤ ± 90 mΩ	187.40	No	
55		Multi Product Calibrator	2	DC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 150 µV AC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 3 mV DC Current range : 0 - 20A or better at 10 mA 1 year absolute uncertainty : ≤ ± 1.5 µA AC Current range : 0 - 20A or better at 10 mA 1 year absolute uncertainty : ≤ ± 8 µA Resistance range : 0 - 1 000 MΩ or better at 10 KΩ 1 year absolute uncertainty : ≤ ± 390 mΩ Capacitance range : 500pF - 100 mF at 1µF 1 year absolute uncertainty : ≤ ± 4 nF Oscilloscope option with 1 GHz Bandwidth or better: Voltage function i) DC Signal a) At 50 Ω load. Amplitude Range : 0 to + 6 V or better	302.89	No	
	2022-23			**Oscilloscope calibrator with 3 GHz Bandwidth or better:**			

56		Scope Calibrator	1	Voltage function i) DC Signal a) At 50 Ω load, Amplitude Range : ±1mV to 5V or better at 1V 1 year absolute uncertainty : ≤ ± 0.3 mV b) At 1 M Ω load, Amplitude Range : ±1mV to ±200V or better at 1V 1 year absolute uncertainty : ≤ ± 0.3 mV ii) Square Wave Signal a) At 50Ω load, Amplitude Range : 40 µ V to 5V pk-pk or better at 1V pk-pk 1 year absolute uncertainty : ≤ ± 1.2 mV b) At 1 M Ω load, Amplitude Range : 40 µ V to 200V por better at 1V pk-pk 1 year absolute uncertainty : ≤ ± 1.2 mV Edge function, Rise time : ≤ 150 ps , Range (pk-pk) : 5.0 mV to 3 V or better at 2.5V 1 year absolute uncertainty : ≤ ± 55 mV Time marker function, Range : 1 nano sec to 5 sec at 10ns 1 year absolute uncertainty : ≤ ± 0.003 psec Levelled sinewave function Frequency Range :0.1 Hz to 3.2 GHz or better Amplitude Range (pk-pk):5 mV to 2 V or better at 2V @3.2GHz: 1 year absolute Amplitude uncertainty : ≤ ± 85mv 1 year absolute Frequency uncertainty : ≤ ± 810Hz	193.95	No	Supply of Calibrators & Reference Standards for estabishing Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS(O&M), CHQ.
57		8 ½ Digital Reference Multimeter	1	DC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 40 µV AC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 1.2 mV DC Current range : 0 - 30 A or better at 1 mA 1 year absolute uncertainty : ≤ ± 18 nA AC Current range : 0 - 30 A or better at 1 mA 1 year absolute uncertainty : ≤ ± 426nA Resistance range : 0 - 2000 MΩ or better at 10 KΩ 1 year absolute uncertainty : ≤ ± 130 mΩ	58.24	No	
		Other items related to /required for calibration					
58		Auto Calibration Software	1	Auto Calibration Software	55.44	No	
59		Factory Training (Electrical) (2 weeks)	1	Factory Training for Electrical calibrators	84.57	No	
60		6 ½ Digit Digital Multimeter	1	DC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 290 µV AC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 9 mV DC Current range : 0 - 10 A or better at 10 mA 1 year absolute uncertainty : ≤ ± 7 µA AC Current range : 0 - 10 A or better at 10 mA 1 year absolute uncertainty : ≤ ± 21 µA Resistance range : 0 - 1000 MΩ or better at 10 KΩ 1 year absolute uncertainty : ≤ ± 1 .1 Ω	4.36	No	

61		5 ½ Digit Digital Multimeter	1	DC Voltage range : 0 - 1000V or better at 10 V 1 year absolute uncertainty : ≤ ± 2.3 mV AC Voltage range : 0 - 750 V rms or 1000 V peak or better at 10 V 1 year absolute uncertainty : ≤ ± 30 mV DC Current range : 0 - 10 A or better at 1 mA 1 year absolute uncertainty : ≤ ± 0.3 µA AC Current range : 0 - 10 A or better at 1 mA 1 year absolute uncertainty : ≤ ± 15 µA Resistance range : 0 - 1000 MΩ or better at 10 KΩ 1 year absolute uncertainty : ≤ ± 2.6 Ω	3.45	No	
62		4 ½ Digit Digital Multimeter	2	DC Voltage range : 0 - 1000V or better at 1 V 1 year absolute uncertainty : ≤ ± 460 µV AC Voltage range : 0 - 750 V rms or 1000 V peak or better at 1 V 1 year absolute uncertainty : ≤ ± 6 mV DC Current range : 0 - 10 A or better at 0.1 mA 1 year absolute uncertainty : ≤ ± 0.3 µA AC Current range : 0 - 10 A or better at 0.1 mA 1 year absolute uncertainty : ≤ ± 0.9 µA Resistance range : 0 - 500 MΩ or better at 10 KΩ 1 year absolute uncertainty : ≤ ± 8 Ω	3.14	No	
		POWER SUPPLY SYSTEMS AND UPS OUTPUT WIRING					Supply of UPS and Supply UPS output wiring, laying & termination etc., for estabishing Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad as per the
63		Three Phase Input(3Ø), Single Phase(1Ø) Output 30KVA Online Modular UPS with 60 minutes Battery backup	1	Input voltage : 3 phase 415V AC ± 15% Output voltage : Single phase 230VAC ± 1% THD output voltage : ≤1% Efficiency : ≥95%	14.85	Yes	
64		Supply, laying, termination and testing of UPS output cables from UPS to workbenches	1	Supply, laying, termination and testing of UPS output cables from UPS to workbenches	5.75	Yes	
		ESD FURNITURE, Non ESD FURNITURE & APPLIANCES					
		ESD Furniture					
65		ESD Workbench	25	Overall Table Size: - 1750 (L) x 1070 (D) x 1780 (H) mm with metal levelers & closing caps on top. - Working Height: 750 mm	18.76	Yes	
66		ESD Storage rack	30	Overall rack size: - 1300 (W) x 850 (D) x 1650 (H) mm with ESD Wheels & closing caps on top.	17.78	Yes	
67		ESD Trolley	1	Overall trolley size: - 1194 (L) x 700 (W) x 1080 (H) mm with 4" ESD Wheels and handle.	0.367	Yes	
68		ESD Chair	22	Swivel & height adjustable	6.89	Yes	
69		Human body Voltage Checker	2	Range : ± 1999V or more Accuracy : ± 10%	0.44	Yes	
70		Combo Tester	2	Pass range for Footwear Left : 0.75 to 100MΩ Right : 0.75 to 100MΩ Pass range for Wrist band : 0.75 to 10.0 MΩ Accuracy : ±10%	0.44	Yes	
71		ESD Footwear	20	Person to ground resistance : 0.75 to 100MΩ	0.08	Yes	

72		Automatic Shoe Dispenser	2	Capacity : 100 (PE) Material : ABS Plastic Release speed : 3 sec/piece	1.50	Yes	Supply of Technical Furnture (both ESD furniture and Non-ESD furniture) for estabishing Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS (O&M), CHQ.
		Non ESD Furniture					
73		Executive Table with pedestal, side unit and credenza (ARRIVE SET)	1	Executive Table with pedestal, side unit and credenza (ARRIVE SET)	4.49	Yes	
74		Chair (HALO VERY HIGH BACK)	1	HALO VERY HIGH BACK	0.69	Yes	
75		Visitor Chair (HALO REVOLVING VISTOR)	4	HALO REVOLVING VISTOR	1.69	Yes	
76		Sofa Set (3+1+1-Seater) (ELITE SOFA-3+1+1)	3	3+1+1-Seater - ELITE SOFA	2.48	Yes	
77		Sofa-3-Seater (ELITE SOFA 3 SEATER)	1	3-Seater - ELITE SOFA	0.38	Yes	
78		Sofa-Visitor (3-Seater) (PISA 3 SEATER)	2	3-Seater - PISA	0.75	Yes	
79		Coffee Table (Glass Top)(ALICE COFFEE TABLE CHERRY)	6	Glass Top - ALICE COFFEE TABLE CHERRY	1.04	Yes	
80		Executive Table with pedestal, side unit and credenza) (ARISTO TBL RG 1800 LH RU 1200 PDL)	1	ARISTO TBL RG 1800 LH RU 1200 PDL	1.20	Yes	
81		Chair (LA SEDE HIGH BACK)	1	LA SEDE HIGH BACK)	0.39	Yes	
82		Visitor Chair (HALO REVOLVING VISITOR)	3	HALO REVOLVING VISITOR	0.83	Yes	
83		Executive Table (ARISTO TBL RH 1350 x 600)	18	ARISTO TBL RH 1350 x 600	3.71	Yes	
84		Executive Chair with head rest (THRIVE PLUS HIGH BACK)	10	THRIVE PLUS HIGH BACK	2.12	Yes	
85		Executive Chair without head rest (THRIVE PLUS MIDBACK)	35	THRIVE PLUS MIDBACK	6.71	Yes	
86		Visiting Chair (THRIVE PLUS VISITOR)	40	THRIVE PLUS VISITOR	6.81	Yes	
87		File Rack (Vertical Filing Cabinet)	7	Vertical Filing Cabinet	1.73	Yes	
88		Canteen Table (Time Out 6-Seater PU Coated)	4	Time Out 6-Seater PU Coated	1.15	Yes	
89		Canteen Chair (Unwind Café Chair)	16	Unwind Cafe Chair	0.53	Yes	
90		Personal Locker (PERSONAL LOCKER UNIT)	2	PERSONAL LOCKER UNIT	0.39	Yes	
91		Shoe Cabinet with Seating (SHOE CABINET MFS 202M (2DOOR) IN HONEY)	2	SHOE CABINET MFS 202M (2DOOR) IN HONEY	0.14	Yes	
92		Book Case (TDU 1200X2000 TR WH/BO.WHT SHF)	3	TDU 1200X2000 TR WH/BO.WHT SHF	1.24	Yes	
93		Multipurpose Table (INSIGHT 1800W)	2	INSIGHT 1800W	0.27	Yes	
94		Almirah (Storwel Plain)	9	Storwel Plain	2.32	Yes	
95		Glass Door Almirah (Glass Door Storwel)	10	Glass Door Storwel	3.26	Yes	
96		Conference Tables Modular (Mingle Conference Table with Wire manager) 22 str	1	Mingle Conference Table with Wire manager 22 str	2.65	Yes	
97		Computer Table (COMPANION C2 BAV.BEECH MOD)	21	COMPANION C2 BAV.BEECH MOD	2.35	Yes	
		DUTs (DEVICE UNDER TEST)					

98		4 GHz Oscilloscope	1	Oscilloscope 4GHZ bandwidth Bandwidth : 4 GHz or more Rise time : < 110 psec No of Input Channels : 4 Maximum Input Voltage At 50Ω : 5 Vrms or more At 1 M Ω : 200 V rms or more DC Vertical Gain Accuracy : ≤ ± 2% Time base Range : 50psec/Div - 50 Sec/Div or more Time base Accuracy : ≤ ± 0.2 ppm Trigger Modes : Normal, Auto, Edge, Width,	74.80	No	Supply of DUTs required for estabishing Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS (O&M), CHQ.
99		Earth Tester (3 Pole, 4 pole & clamp measurement)	1	Earth Tester Range (3P, 4P & 3P + Clamp) : 0- 9KΩ or better Resolution : 0.01 Ω or better at 1 Ω 1 year absolute Accuracy : ≤ ± 60 mΩ Range (Clamp measurement) : 0- 35 Ω or better Resolution :0.01 Ω or better at 1 Ω 1 year absolute Accuracy : ≤ ± 0.2 Ω	3.22	No	
Total Expected Expenditure for Year 2022-23 (INR & Lakhs)					**1749.66**		
		CALIBRATORS & REFERENCE STANDARDS (PRECISION TEST EQUIPMENTS)					
100		Precision Voltage Divider	1	i) Voltage Divider should have ratios and Accuracies as Ratio Accuracy a) 1:1 : ≤ ± 0.05 ppm b) 10 : 1 : ≤ ± 0.1 ppm c) 100 : 1 : ≤ ± 0.2 ppm d) 1000 : 1 : ≤ ± 0.5 ppm ii) Resistance Divider Ratios as a) 1 : 1 b) 10 : 1 c) 100 : 1 d) 1000 : 1	39.70	No	Supply of Calibrators & Reference Standards for estabishing Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS(O&M), CHQ.
101		Discrete Resistance Standards 1Ω & 10 KΩ	1	Resistance Standard Stability for 1 Year a) 1 Ω : ≤ ± 3 ppm b) 10 kΩ : ≤ ± 2 ppm	11.66	No	
102		4 Wire Decade Resistance Box 10mΩ to 121 MΩ	1	Resistance Range : 1mΩ -120MΩ or better a) at 10 mΩ 1 year absolute Accuracy : ≤ ± 510 µΩ b) at 1 Ω 1 year absolute Accuracy : ≤ ± 525 µΩ c) at 10 KΩ 1 year absolute Accuracy : ≤ ± 205 mΩ d) at 100 MΩ 1 year absolute Accuracy : ≤ ± 22 KΩ	27.70	No	
103		GPS-Controlled Rubidium Frequency Reference Standard	1	Frequency : 10MHz Frequency Stability Locked To GPS : Frequency offset (24 h mean) : ≤1x10^{-12} (at temperature 20°C to 26°C)	46.52	No	Supply of Calibrators & Reference Standards for estabishing Test Equipment Calibration Lab at Hyderabad International

104		Pulsed RF Microwave Frequency Counter/Analyzer	1	Frequency : 0.002 Hz to 400 MHz 300 MHz to 27GHz Aging. Per year : ≤1.5x10^{-8}	42.05	No	Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS(O&M), CHQ.
105		RF & Microwave Signal Generator	2	Frequency range : ≤ 8 kHz to 20 GHz Internal timebase accuracy : ≤ (0.04ppm per year) Level accuracy : –90 dBm to +25 dBm : 8MHz < f ≤ 3 GHz : ≤ 0.5 dB 3GHz < f ≤ 20 GHz : ≤ 0.9 dB SSB Phase Noise at 1KHz offset : 1 GHz : -135dBc/Hz The Signal generator should have the following functions / options: Analog modulations : AM / FM / PM/ Pulse modulation. Internal modulation generator Multifunction generator Pulse generator Pulse train VOR/ILS/ Marker Beacon options.	257.00	No	
106		RF Signal Broadband Amplifier	1	Frequency range : 9 kHz to 250 MHz Output Power : 1300 W Gain flatness : ≤ ±2.5 dB	166.52	No	
107		Measuring Receiver with Power Sensor Module	2	Frequency range :20 Hz to 26.5 GHz Internal time base Accuracy : ≤ 0.05ppm per year Absolute level measurement : RF : 100 KHz to 4.2 GHz level -130 dBm to +26 dBm : ±0.085dB ± 0.005dB per 10 dB step Absolute level measurement : RF : 4.2 GHz to 12.4GHz level -130 dBm to +26 dBm : ±0.11dB ± 0.005dB per 10 dB step The Measuring reciver should have the following measurement modes: 1) Frequency counter mode. 2) RF power measurement mode. 3) Tuned receiver mode. 4) Modulation measurement mode. 5) Spectrum Analyzer mode. 6) VOR / ILS measurement demodulator. 7) Phase noise measurement.	421.40	No	

108		RF Power meter with 2 Power Sensors	1	Power Sensor 1 : 10 MHz to 18 GHz Power measurement range : ≤ -65 dBm to ≥ + 20 dBm - 60dBm to - 46dBm : ≤ + 0.61dB to ≤ -0.71dB - 45dBm to + 20dBm : ≤ ± 0.07dB Power Sensor 2 : 50 MHz to 6 GHz Power Measurement Range : –130 dBm to +20 dBm 50 MHz to 6 GHz : ≤ 0.18 dB	45.71	No	
109		Power Sensor Calibration Kit	1	Frequency : DC to 18 GHz Power Standard Power Range : –20 dBm to +20 dBm Calibration uncertainty : DC to 18 GHz : ≤ 1.10 % (0.048 dB)	39.68	No	
110	**2023-24**	Signal & Spectrum Analyzer	1	Frequency : 2 Hz to 26.5 GHz Reference Frequency Accuracy : ≤ 0.036 ppm SSB Phase noise : At 1GHz frequency, carrier offset = 1KHz ≤ –127 dBc (1 Hz) Total measurement uncertainty of level : for Freq. ≤ 8GHz : ≤ ± 0.38dB f > 8GHz < 26.5 GHz : ≤ ± 1.8dB DANL : 50 MHz ≥ f ≤ 8GHz : - 162 DBm or better The spectrum analyzer should have the following functions / measurement capabilities: Should be capable for analog modulation analysis of AM/FM/ϕM. Should be capable for VOR/ILS measurements. Should be capable for Phase noise measurements. Should be capable for pulse measurements. Should be capable for EMI measurements with the EMI. filters : Bandwidths (–6 dB) : 10 Hz, 100 Hz, 200 Hz, 1 kHz, 9 kHz, 10 kHz, 100 kHz, 120 kHz, 1 MHz Should be capable for CISPR calibration for EMI measurements. Setting range of attenuator : 0 to ≥ 79 dB	172.36	No	Supply of Calibrators & Reference Standards for estabishing Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS(O&M), CHQ.

111		Vector Network Analyzer	1	Frequency : 100 kHz to 20 GHz Number of test ports : 4 Reference Frequency Accuracy : ≤ 0.16 ppm Dynamic range for 100 kHz to 10 MHz : ≥ 100 dB 10 MHz to 100 MHz : ≥ 115 dB 100 MHz to 6GHz : ≥ 125 dB 6 GHz to 20 GHz : ≥ 120 dB Effective system data (at measurement bandwidth of 10 Hz) Parameter 100 kHZ to 10 GHZ 10 GHz to 20 GHz Directivity ≥ 46 dB ≥ 41 dB Source match ≥ 43dB ≥ 38dB Load match ≥ 44dB ≥ 40dB Reflection tracking ≤ 0.05dB ≤ 0.05dB Transmission tracking ≤0.025dB ≤ 0.035dB Test port output : i) Power range for each port For frequency range 100 kHz to 20GHz : ≤ -60 dBm to ≥ + 8 dBm ii) Power accuracy : (at source power -10dBm) 100 kHz to 10 GHz : ≤ 2 dB 10 GHz to 20 GHz : ≤ 3 dB iii) Power linearity (referenced to -10dBm) Source power ≥ -30 dBm : ≤ 1 dB Source power < -30 dBm : ≤ 2 dB v) Harmonics at 0dBm For freq. 10 MHz to 20GHz : ≤ -20 dBc Test Port Input i) Power measurement accuracy (at -10 dBm without power calibration) 100 k Hz to 20 GHz : < 1 dB ii) Noise level at 1 kHz measurement bandwidth normalized to 1 Hz 10 MHz to 20 GHz : ≤ - 120 dBm (1Hz)	172.89	No	
112		RF Cable Assemblies & RF Components	1	Metrology grade (Precision Test and Measurement) RF and Microwave cable Assemblies, Adapters, Attenuators, RF Splitters and Terminators / Dummy loads in the frequency range from DC - 26.5GHz.	173.44	No	
113		Factory Training (RF) (3 weeks)	1	Factory Training for RF calibrators	93.81	No	

		Appliances	**2**				
114		Refrigerator Single Door 185 Ltr Direct cooling	3	185 Ltr Direct cooling	0.37	Yes	
115		Microwave Oven	3	Microwave Oven	0.37	Yes	
		PACKING SYSTEM					
116		Foam based packing system / Foam Plus Hand Packer Machine 9008099	1	Electronic assembly having pump(s) / microprocessor based self diagnostic controller / self cleaning cartridge dispenser / chemical hoses with heater wire etc.	7.92	No	Supply of foam based packing system and required chemicals etc for estabishing Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS (O&M), CHQ.
117		CHEMICAL A 250KG DRUM Polymeric Isocyanate, Polymeric diphenylmethane isocyanate (Polymeric MDI or PMDI) or Isocyanic ACID, Polymethylenepolyphenelene ester methylenediphenyl diisocyanate	3	Polymeric Isocyanate, Polymeric diphenylmethane isocyanate (Polymeric MDI or PMDI) or Isocyanic ACID, Polymethylenepolyphenelene ester methylenediphenyl diisocyanate	3.91	No	
118		Chemical B / POLYOL Component B DRUM ≥ 210Kg	3	Polyurethane resin, alcohols, c9-11, ethoxylated or Isotridecanolethoxylat iminodiethanol, diethanolamine tetramethyl, ethylamine, dimethylaminoathyl methylamine.	3.54	No	
119		FILM - 36" (90CM)	3	FILM - 36" (90CM)	0.56	No	
120		PORT CLEANER / F+ cleaner E (0,75l spray bottle)	8	Cleaner / spray bottle > 0.7 Ltr bottle	0.12	No	
121		Cleaner Solvent 5Ltr can	2	Cleaner Solvent / F+ HP/HP² cleaner G	0.08	No	
122		Catridge kit / Hand Packer machine	2 / 1	Catridge Kit / Non comprehensive AMC FOAMplus Handpacker Machine	0.51	No	
123		4 Years Extended Warranty	1	4 Years Extended Warranty	2.52	No	
124		Voltage Stabilizer	1	Suitable Voltage Stabiliser	0.40	No	
		CONSULTANCY & TRAINING for NABL ACCREDITATION					
125		Consultancy and training services for obtaining NABL accreditation for Test Equipment Calibration lab	1	Consultancy and training in Electro-Technical field to help the Calibration lab to develop the required calibration procedures, SOPs, documentation, quality manual, internal audit, proficiency testing and application to NABL to closing of NCs till obtaining NABL accreditation.	27.14	Yes	Requirement of Consultant for providing consultancy and training for preparing the required docuentation to obtaining NABL accreditation for the Test Equipment Calibration Lab being established at Hyderabad International Airport, Begumpet, Hyderabad as per the requirement of the Directorate of CNS (O&M), CHQ.
		Total Expected Expenditure for Year 2023-24 (INR & Lakhs)			**1,757.90**		

126	**2024-25**	**Hard Trasit Cases**	**1000**	**Hard trasit cases shall be made of LLDPE (Linear Low-Density Poly Ethylene) or polypropylene copolymer and having the inner dimensions of 500*460*180mm(L*B*H). The transit cases should have Special lock facility . The transit cases shall confirm to MIL STD 810 G and JSG 0102, IP67 standards The transit cases should also satisfy the following test conditions 1) Rain test (as per JSG- 0102) 2) Vibration test (as per MIL-STD-810G, Method 514.6) 3) Dry heat test (as per JSS-0253-01 test C) 4) Bump Test (as per JSS-0253-01 test A) 5) Drop Test (as per MIL- STD 810G, Method 516.6) 6) Lift Test (as per JSG-0102)**	**183.00**	Yes	Requirement of Hard transit cases and chemicals for foam based packing system for the Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad.
127		**Chemical A & Chemical B for foam based packing system.**	**5 sets**	**Chemical A 250kg Drum / Polymethylenepolyphenelene ester methylenediphenyl diisocyanate Chemical B/ Polyol 210 KgDrum**	**12.50**	No	
		Total Expected Expenditure for Year 2024-25 (INR & Lakhs)			**195.50**		
128	**2025-26**	**Hard Trasit Cases**	**100**	**Hard trasit cases shall be made of LLDPE (Linear Low-Density Poly Ethylene) or polypropylene copolymer and having the inner dimensions of 500*460*180mm(L*B*H). The transit cases should have Special lock facility . The transit cases shall confirm to MIL STD 810 G and JSG 0102, IP67 standards The transit cases should also satisfy the following test conditions 1) Rain test (as per JSG- 0102) 2) Vibration test (as per MIL-STD-810G, Method 514.6) 3) Dry heat test (as per JSS-0253-01 test C) 4) Bump Test (as per JSS-0253-01 test A) 5) Drop Test (as per MIL- STD 810G, Method 516.6) 6) Lift Test (as per JSG-0102)**	**18.30**	Yes	Requirement of Hard transit cases and chemicals for foam based packing system for the Test Equipment Calibration Lab at Hyderabad International Airport, Begumpet, Hyderabad.
129		**Chemical A & Chemical B for foam based packing system.**	**1 set**	**Chemical A 250kg Drum / Polymethylenepolyphenelene ester methylenediphenyl diisocyanate Chemical B/ Polyol 210 KgDrum**	**2.50**	No	
		Total Expected Expenditure for Year 2025-26 (INR & Lakhs)			**20.80**		
Grand Total (INR & Lakhs)					**4457.78**		

Note:

This projection is as per the current status of ongoing projects at CRSD. For induction of new projects, the projection may change accordingly.