



Title:	Product Breakdown Structure	Owner: Archuleta
Revision:	C	11/2/2022
Doc. #:	020.10.20.00.00-0004-DSN	







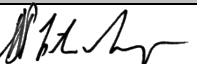
Product Breakdown Structure (PBS)


020.10.20.00.00-0004-DSN

Status: Released

PREPARED BY	ORGANIZATION
M. Archuleta	NRAO

APPROVALS	ORGANIZATION	SIGNATURES
M. Archuleta, Systems Engineer	ngVLA, NRAO	 Melissa Archuleta (Nov 7, 2022 12:18 MST)
R. Selina, Project Engineer	ngVLA, NRAO	 R. Selina (Nov 7, 2022 12:20 MST)
W. Hojnowski, Project Manager	ngVLA, NRAO	 William Hojnowski (Nov 21, 2022 10:08 MST)
W. Esterhuysen, Project Manager	ngVLA, NRAO	

RELEASED BY	ORGANIZATION	SIGNATURES
W. Esterhuysen, Project Manager	ngVLA, NRAO	

	Title:	Product Breakdown Structure	Owner: Archuleta
	Revision:	C	Date: 2022-11-02
	Doc. #:	020.10.20.00.00-0004-DSN	
Revision	Date	Change By	Comments
1	2021-04-13	T. Kusel	Initial Draft, following review by all IPTs.
2	2021-05-21	T. Kusel	Added: WVR enclosure; Glycol Pipes
3	2021-06-28	T. Kusel	Updated the CSP breakdown and DBE description based in input from Omar
4	2021-08-28	T. Kusel	Updated Cryo breakdown based on inputs from Denis
5	2021-11-12	T. Kusel	Updated ATF section based on updated AE Block Diagrams
6	2021-12-10	T. Kusel	Updated AE section to align with latest AE Block Diagrams
7	2022-01-10	T. Kusel	Updated HIL section to synchronize product numbers with HIL product tree
8	2022-01-28	T. Kusel	Added Column S to indicate which parts of the structure are to be baselined for CDR
9	2022-02-17	T. Kusel	Updated BMR part of the structure
10	2022-03-30	T. Kusel	Updated time and frequency reference parts of the structure based on inputs from B.Shillue Added item classifications Added location classifications
A	2022-04-22	T. Kusel	Update based on the RIDS of the internal pre-CDR review.First released version.
A.1	2022-07-25	T. Kusel	Changes incorporating feedback from CDR and CM system implementation. Changes from Rev A to B indicated in Columns U&V
B	2022-07-25	T. Kusel	Prepared for release
C	2022-11-02	M. Archuleta	Antenna Electronics Test Items switched back to 020.02.15 and SBA moved back to 020.02.17; sub-items re-entered (020.02.15.01.00 and 020.02.15.01.01). CDR Baseline version

TS04 B Band 4 2 RD	30.15.42.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS04 C Band 4 3 RD	30.15.43.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS04 D Band 4 4 RD (in WVR structure)	45.12.44.00		ngVAE.IRD				-				
TS04 E Band4 RD (in WVR structure)	45.12.07.00		ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS05 A Band 5 1 RD	30.15.51.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS05 B Band 5 2 RD	30.15.52.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS05 C Band 5 3 RD	30.15.53.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS05 D Band 5 4 RD	30.15.54.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 A Band 6 1 RD	30.15.61.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 B Band 6 2 RD	30.15.62.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 C Band 6 3 RD	30.15.63.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 D Band 6 4 RD	30.15.64.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 E Band 6 5 RD	30.15.65.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 F Band 6 6 RD	30.15.66.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 G Band 6 7 RD	30.15.67.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
TS06 H Band 6 8 RD	30.15.68.00	SRU	ngVAE.IRD	ANT.FED.G	Component	Electronic	-				
Digital Back End (DBE) (includes Data Transmission System)	30.25.00.00	DBE	3	3	Y	ngV.CSPT.DBE	ANT.PED.G	Subsystem	Electronic	-	Processes data from IMUs, feeds in to sub-panels, and formats for data transmission over fiber infrastructure. functionality
DS01 DBE Module	30.25.10.00	SRU	ngV.CSPT.DBE	ANT.PED.G	Component	Electronic	-				
Antenna Time and Frequency	30.35.00.00	ATF	2	4	Y	ngV.CSPT.ATF	ANT.G	Subsystem	Component	Electronic	-
LS04 Band 2 1 LO	30.35.20.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS05 Band 2 2 LO	30.35.21.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS06 Band 3 1 LO	30.35.30.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS07 Band 3 2 LO	30.35.31.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS08 Band 4 1 LO	30.35.40.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS09 Band 4 2 LO	30.35.41.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS10 Band 4 3 LO	30.35.42.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS11 Band 5 1 LO	30.35.50.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS12 Band 5 2 LO	30.35.51.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS13 Band 5 3 LO	30.35.52.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS14 Band 5 4 LO	30.35.53.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS15 Band 6 1 LO	30.35.60.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS16 Band 6 2 LO	30.35.61.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS17 Band 6 3 LO	30.35.62.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS18 Band 6 4 LO	30.35.63.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS19 Band 6 5 LO	30.35.64.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS20 Band 6 6 LO	30.35.65.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS21 Band 6 7 LO	30.35.66.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS22 Band 6 8 LO	30.35.67.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS01 Main LO module	30.35.10.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
FE1 LS01 LO Module metalwork (in BMR structure)	30.35.30.11										
LS01 main LO module internal cabling	30.35.30.00	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Cabling	-				
LS01 M&C board	30.35.10.02	SRU	ngV.CSPT.ATF	ANT.FED.G	Part - manufactured	Electronic	-				
LS01 Regulator board	30.35.10.03	SRU	ngV.CSPT.ATF	ANT.FED.G	Part - manufactured	Electronic	-				
LS01 main LO module test plate (in EEC structure)	30.35.10.04	SRU									
LS01 Frequency Receiver and Reflector	30.35.10.06	SRU	ngV.CSPT.ATF	ANT.FED.G	Component	Electronic	-				
LS23 WVR LO L2 & Timing module (in WVR structure)	45.12.03.00										
LS02 Reference Receiver and Timing module (in RD structure)	30.35.10.00	SRU									
LS02.123 board	40.35.20.00										
DC Power Supply System	30.50.00.00	PSU	2	4	Y	ngVAE.PSU	ANT.G	Subsystem	Component	Mechanical	-
MS07 Utility Module (FE End M&C/PSU)	30.50.01.00	SRU	ngVAE.PSU	ANT.FED.G	Component	Mechanical	-				
MS07 Utility Module PSU	30.50.01.10	SRU	ngVAE.PSU	ANT.FED.G	Part - manufactured	Electronic	-				
M&C Module FE Enclosure (in HL structure)	30.45.50.00										
FE Cold Plate, MS07 Utility Module (in EEC structure)	30.40.50.00										
FE MS07 Utility Module metalwork (in BMR structure)	30.55.30.12										
MS06 Utility Module (FE End M&C/PSU)	30.50.02.10	SRU	ngVAE.PSU	ANT.AUX.G	Component	Mechanical	-				
MS06 Utility Module PSU	30.50.02.10	SRU	ngVAE.PSU	ANT.AUX.G	Part - manufactured	Electronic	-				
M&C Module Aux enclosure (in HL structure)	30.45.50.00										
AUX Cold Plate, MS06 Utility Module (in EEC structure)	30.40.60.70										
AUX MS06 Utility Module metalwork (in BMR structure)	30.55.30.20										
MS05 Utility Module (Cryo/ECC anc)	30.50.03.00	SRU	ngVAE.PSU	ANT.YOK.G	Component	Mechanical	-				
MS05 Utility Module PSU	30.50.03.10	SRU	ngVAE.PSU	ANT.YOK.G	Part - manufactured	Electronic	-				
M&C Module Cryo Enclosure (in HL structure)	30.45.55.00										
Cry Cold Plate, MS05 Utility Module (in EEC structure)	30.40.61.10										
Cry MS05 Utility Module metalwork (in BMR structure)	30.55.30.30										
MS02 Utility Module (Pedestal)	30.50.04.00	SRU	ngVAE.PSU	ANT.PED.G	Component	Mechanical	-				
MS02 Utility Module PSU	30.50.04.10	SRU	ngVAE.PSU	ANT.PED.G	Part - manufactured	Electronic	-				
M&C Module Pedestal Rack (in HL structure)	30.45.52.00										
ELR MS02 Utility Module metalwork (in BMR structure)	30.55.30.43										
MS08 Utility Module (WVR)	30.50.06.00	SRU	ngVAE.PSU	ANT.WVR.G	Component	Mechanical	-				
MS08 Utility Module PSU	30.50.06.10	SRU	ngVAE.PSU	ANT.WVR.G	Part - manufactured	Electronic	-				
M&C Module WVR (in HL structure)	30.45.58.00										
WVR Cold Plate, MS08 Utility Module (in EEC structure)	30.40.61.40										
WVR MS08 Utility Module metalwork (in BMR structure)	30.55.30.50										
PS00 48VDC Power sub-system	30.50.07.00	SRU	ngVAE.PSU	ANT.G	Component	Electronic	-				
DC Power cabling	30.50.08.00	SRU	ngVAE.PSU	ANT.G	Component	Cabling	-				
Passive Battery	30.50.09.00	SRU	ngVAE.PSU	ANT.G	Component	Electronic	-				
Bins, Modules & Racks (BMR)	30.55.00.00	BMR	2	4	Y	ngVAE.BMR	ANT.G	Subsystem	Component	Mechanical	-
Racks	30.55.10.00	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR Electronics Rack	30.55.20.00	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
Enclosures	30.55.20.00	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
FE Enclosure	30.55.20.05	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
FE AS02 Band 5 6 RD/LO Enclosure	30.55.20.06	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
AUX Enclosure	30.55.20.10	SRU	ngVAE.BMR	ANT.AUX.G	Component	Mechanical	-				
Cry Enclosure	30.55.20.20	SRU	ngVAE.BMR	ANT.YOK.G	Component	Mechanical	-				
WVR FS07 Receiver Module Environmental Enclosure	30.55.20.25	SRU	ngVAE.BMR	ANT.WVR.G	Component	Mechanical	-				
WVR FS07 Receiver Module RF Enclosure	30.55.20.28	SRU	ngVAE.BMR	ANT.WVR.G	Component	Mechanical	-				
WVR MS06 Utility Module Environmental Enclosure	30.55.20.27	SRU	ngVAE.BMR	ANT.WVR.G	Component	Mechanical	-				
ARCS Modules	30.55.30.00	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
ARCS Module Blank and Common parts	30.55.30.05	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
FE AS02 Band 5 4 RD/LO Module metalwork	30.55.30.10	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
FE LS01 LO Module metalwork	30.55.30.11	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
FE MS07 Utility Module metalwork	30.55.30.12	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
AUX MS06 Utility Module metalwork	30.55.30.20	SRU	ngVAE.BMR	ANT.AUX.G	Component	Mechanical	-				
AUX FS21 Cold Head VFD Controller Module metalwork	30.55.30.21	SRU	ngVAE.BMR	ANT.AUX.G	Component	Mechanical	-				
AUX FS21 Cold Head VFD Driver Module metalwork	30.55.30.22	SRU	ngVAE.BMR	ANT.AUX.G	Component	Mechanical	-				
AUX FS22 Vacuum Pump Driver Module metalwork	30.55.30.23	SRU	ngVAE.BMR	ANT.YOK.G	Component	Mechanical	-				
Cry MS05 Utility Module metalwork	30.55.30.30	SRU	ngVAE.BMR	ANT.YOK.G	Component	Mechanical	-				
Cry Helium Pressure Regulator Electronics Module metalwork	30.55.30.31	SRU	ngVAE.BMR	ANT.YOK.G	Component	Mechanical	-				
ELR MS02 Utility Module metalwork	30.55.30.40	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR MS02 DBE Module metalwork	30.55.30.41	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR LS03 Reference Receiver and Timing Module metalwork	30.55.30.42	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR MS02 WVR Rack End Module metalwork	30.55.30.43	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR MS02 Antenna Supervisor Computer Module metalwork	30.55.30.44	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR MS02 Maintenance Computer Module metalwork	30.55.30.45	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR MS02 ECC Electronics Module metalwork	30.55.30.46	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR "Data Backhaul Repeater Equipment - Multiple modules in one"	30.55.30.47	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR "LS02 Reference Distribution Equipment - Multiple modules in one"	30.55.30.48	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
WVR MS08 Utility Module metalwork	30.55.30.50	SRU	ngVAE.BMR	ANT.WVR.G	Component	Mechanical	-				
ARCS Bins	30.55.40.00	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
ARCS Bin Blank and common parts	30.55.40.01	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
FE Bin	30.55.40.05	SRU	ngVAE.BMR	ANT.FED.G	Component	Mechanical	-				
AUX Bin	30.55.40.10	SRU	ngVAE.BMR	ANT.AUX.G	Component	Mechanical	-				
Cry Bin	30.55.40.15	SRU	ngVAE.BMR	ANT.YOK.G	Component	Mechanical	-				
ELR Bin 1	30.55.40.20	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR Bin 2	30.55.40.21	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR Bin 3	30.55.40.22	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR Bin Data Backhaul Equipment	30.55.40.23	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
ELR Bin LS02 Reference Distribution Equipment	30.55.40.24	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
Cable Carrier	30.55.50.00	SRU	ngVAE.BMR	ANT.PED.G	Component	Mechanical	-				
Front End Cable Carrier	30.55.50.01	SRU	ngVAE.BMR	ANT.PED.G	Part - manufactured	Mechanical	-				
Electronics Environmental Control System (ECC)	30.60.00.00	EEC	2	4	Y	ngVAE.ECC	ANT.G	Subsystem	Component	Mechanical	-
Glycol Chiller Heater	30.60.10.00	RR	ngVAE.ECC	ANT.SHE.G	Part - procured	Mechanical	-				
ELR Electronics Rack Air Handler Unit	30.60.20.00	RR	ngVAE.ECC	ANT.PED.G	Component	Mechanical	-				
Glycol Pipes	30.60.30.00	RR	ngVAE.ECC	ANT.PED.G	Component	Piping	-				
FE Internal Glycol lines	30.60.31.00	RR	ngVAE.ECC	ANT.FED.G	Component	Piping	-				
AUX Internal Glycol Inlet	30.60.31.00	RR	ngVAE.ECC	ANT.AUX.G	Component	Piping	-				
Cry Internal Glycol lines	30.60.31.00	RR	ngVAE.ECC	ANT.YOK.G	Component	Piping	-				
WVR Internal Glycol lines	30.60.31.00	RR	ngVAE.ECC	ANT.WVR.G	Component	Piping	-				
GEN Interconnecting Glycol Piping for all M&AD Equipment	30.60.31.00	RR	ngVAE.ECC	ANT.G	Component	Piping	-				
GEN Interconnecting Glycol Pipe Insulation	30.60.31.00	RR	ngVAE.ECC	ANT.G	Component	Piping	-				
GEN Valves for glycol lines	30.60.31.00	RR	ngVAE.ECC	ANT.G	Component	Piping	-				
Heat Exchangers	30.60.40.00	RR	ngVAE.ECC	ANT.FED.G	Component	Mechanical	-				
FE Fan for heat exchanger	30.60.41.00	RR	ngVAE.ECC	ANT.FED.G	Component	Mechanical	-				
FE Liquid to air heat exchanger	30.60.42.00	RR	ngVAE.ECC	ANT.FED.G	Component	Mechanical	-				
AUX Fan for heat exchanger	30.60.43.00	RR	ngVAE.ECC	ANT.AUX.G	Component	Mechanical	-				
AUX Liquid to air heat exchanger	30.60.44.00	RR	ngVAE.ECC	ANT.AUX.G	Component	Mechanical	-				
Air flow management	30.60.50.00	RR	ngVAE.ECC	ANT.PED.G	Component	Mechanical	-				
ELR Rack air flow baffles	30.60.51.00	RR	ngVAE.ECC	ANT.PED.G	Component	Mechanical	-				
ELR Air ducting for Electronics Rack	30.60.52.00	RR	ngVAE.ECC	ANT.PED.G	Component	Mechanical	-				
Cold Plates	30.60.60.00	RR	ngVAE.ECC	ANT.FED.G	Component	Mechanical	-				
GEN Cold Plate Common Parts	30.60.60.00	RR	ngVAE.ECC	ANT.FED.G	Component	Mechanical	-				
FE Cold Plate, FE Enclosure	30.60.60.10	RR	ngVAE.ECC	ANT.FED.G	Part - manufactured	Mechanical	-				
FE Cold Plate, SA-S02 Custom RD RF Enclosure	30.60.60.20	RR	ngVAE.ECC	ANT.FED.G	Part - manufactured	Mechanical	-				
FE Cold Plate, SA-S02 ARCS M&AD RF Enclosure	30.60.60.30	RR	ngVAE.ECC	ANT.FED.G	Part - manufactured	Mechanical	-				
FE Cold Plate, LS01 ARCS LO Module	30.60.60.40	RR	ngVAE.ECC	ANT.FED.G	Part - manufactured	Mechanical	-				
FE Cold Plate, MS07 Utility Module (PS + M&C)	30.60.60.50	RR	ngVAE.ECC	ANT.FED.G	Part - manufactured	Mechanical	-				
AUX Cold Plate, Aux Enclosure	30.60.60.60	RR	ngVAE.ECC	ANT.FED.G	Part - manufactured	Mechanical	-				
AUX Cold Plate, MS06 Utility Module (PS + M&C)	30.60.60.70	RR	ngVAE.ECC	ANT.AUX.G	Part - manufactured	Mechanical	-				
AUX Cold Plate, FS23 VFD Control Module	30.60.60.80	RR	ngVAE.ECC	ANT.AUX.G	Part - manufactured	Mechanical	-				
AUX Cold Plate, FS21 Cold Head VFD Driver	30.60.60.90	RR	ngVAE.ECC	ANT.AUX.G	Part - manufactured	Mechanical	-				
AUX Cold Plate, FS24 Vacuum pump	30.60.61.00	RR	ngVAE.ECC	ANT.AUX.G	Part - manufactured	Mechanical	-				
Cry Cold Plate, MS05 Utility Module (PS + M&C)	30.60.61.10	RR	ngVAE.ECC	ANT.YOK.G	Part - manufactured	Mechanical	-				
Cry Cold Plate Helium Compression VFD	30.60.61.20	RR	ngVAE.ECC	ANT.YOK.G	Part - manufactured	Mechanical	-				
WVR Cold Plate, FS07 RF Enclosure	30.60.61.30	RR	ngVAE.ECC	ANT.WVR.G	Part - manufactured	Mechanical	-				
WVR Cold Plate, MS08 Utility Module	30.60.61.40	RR	ngVAE.ECC	ANT.WVR.G	Part - manufactured	Mechanical	-				
Dry Air System	30.60.70.00	RR	ngVAE.ECC	ANT.G							

Item	Code	Quantity	Unit	Description	Material	Category	System	Notes
WVR Cold Plate, F507 RF Enclosure (EEC structure)	SRU							
WVR Heaters (EEC structure)	SRU							
M508 WVR Utility Module Assembly	LRU	45.13.00.00		ngv AE WVR	ANT.WVR.G	Component	Mechanical	
WVR feed heater control relay	LRU	45.13.00.00		ngv AE WVR	ANT.WVR.G	Part - procured	Electronic	
WVR MS08 flow management	LRU	45.13.20.00		ngv AE WVR	ANT.WVR.G	Component	Fibre Optic	
MS08 WVR Utility Module Environmental Enclosure (in BMM structure)	SRU							
MS08 WVR Utility Module (in PSU structure)	LRU	45.14.00.00		ngv AE WVR	ANT.PED.G	Component	Mechanical	
D502 WVR Back-End Assembly	LRU	45.14.10.00		ngv AE WVR	SBA.PED.G	Part - manufactured	Electronic	
D502 WVR DSP board	LRU	45.14.10.00		ngv AE WVR	SBA.PED.G	Part - manufactured	Electronic	
D502 WVR DSP board 2 (TBD number of board)	LRU	45.15.00.00		ngv AE WVR	VR.G	Component	SWFW	
WVR Delay Calibration Software	LRU	45.15.00.00		ngv AE WVR	SBA.G	Component	Mechanical	
WVR SBA Pedestal	LRU	45.16.10.00		ngv AE WVR	SBA.G	Component	Mechanical	
WVR SBA Pedestal Mount	LRU	45.16.11.00		ngv AE WVR	SBA.G	Component	Mechanical	
Monitor and Control Hardware Interface Layer (HIL)	HL	30.45.00.00	2 4 Y	ngv AE.HIL			Subsystem	
MS05 Supervisor Computer (hardware only)	LRU	30.45.50.00		ngv AE.HIL	ANT.PED.G	Part - procured	Computing	
MS05 Maintenance Computer (hardware only)	LRU	30.45.51.00		ngv AE.HIL	ANT.PED.G	Part - procured	Computing	
M&C Module Pedestal Back (part of MS05 Utility Module)	SRU	30.45.52.00		ngv AE.HIL	ANT.PED.G	Part - manufactured	Electronic	
MS04 EEC module	SRU	30.45.54.00		ngv AE.HIL	ANT.YOK.G	Component	Electronic	
M&C module Cryo Enclosure (part of MS05 Utility Module)	SRU	30.45.55.00		ngv AE.HIL	ANT.YOK.G	Part - manufactured	Electronic	
M&C module Aux enclosure (part of MS05 Utility Module)	SRU	30.45.56.00		ngv AE.HIL	ANT.YOK.G	Part - manufactured	Electronic	
M&C module FE Enclosure (part of MS05 Utility Module)	SRU	30.45.57.00		ngv AE.HIL	ANT.FED.G	Part - manufactured	Electronic	
M&C module WVR (part of MS05 Utility Module)	SRU	30.45.58.00		ngv AE.HIL	ANT.WVR.G	Part - manufactured	Electronic	
SAS02 Power & Control Module	SRU	30.45.59.00		ngv AE.HIL	ANT.FED.G	Part - manufactured	Electronic	
Antenna Fibre Optic System	AFD	30.70.00.00	2 4 Y	ngv AE.AFD	ANT.G		Subsystem	
FE Enclosure 12 Core Fibre connector & splice tray	AFD	30.70.00.00		ngv AE.AFD	ANT.PED.G	Part - procured	Fibre Optic	
FE Enclosure 16 Core Fibre connector & splice tray	AFD	30.70.02.00		ngv AE.AFD	ANT.PED.G	Part - procured	Fibre Optic	
Aux enclosure Fibre management unit	AFD	30.70.03.00		ngv AE.AFD	ANT.AUX.G	Part - procured	Fibre Optic	
Cryo/FCC 12 Core Fibre connector/splice tray	AFD	30.70.04.00		ngv AE.AFD	ANT.YOK.G	Part - procured	Fibre Optic	
Electr Rack circular 36 core MM fibre connector	AFD	30.70.05.00		ngv AE.AFD	ANT.PED.G	Part - procured	Fibre Optic	
Electr Rack circular 36 core SM fibre connector & splice tray	AFD	30.70.06.00		ngv AE.AFD	ANT.PED.G	Part - procured	Fibre Optic	
Antenna Fibre Cabling	BR	30.70.07.00		ngv AE.AFD	ANT.G	Component	Cabling	
SBA Antenna System	6AS	47.00.00.00	3	ngv AE	SBA.G		System	
Short Baseline Antenna	SBA	26.00.00.00	2 4 Y	ngv ANT	SBA.G		Subsystem	
SBA Electronics	6AS	31.00.00.00	4	ngv AE	SBA.G		Component - Functional	
Product breakdown TBD		31.00.00.00						
Total Power Antenna System	TPA	11.00.00.00		ngv ANT	TPA.G		System	
Total Power Antenna	TPA	27.00.00.00		ngv ANT	TPA.G		Subsystem	
TPA Electronics	TPA	32.00.00.00		ngv AE	TPA.G		Component - Functional	
Product breakdown TBD		32.00.00.00						
Environmental Monitoring & Characterization System	MON	46.00.00.00	2 3 Y	ngv AE.MON			Subsystem	
Weather Stations	MON	46.10.00.00	3 4	ngv AE.MON	ENV.WTH.G	Component	Functional	
Atmospheric Phase Monitor	MON	46.20.00.00	3 4	ngv AE.MON	ENV.ATM.G	Component	Functional	
Cloud Monitor	MON	46.30.00.00	3 4	ngv AE.MON	ENV.CLD.G	Component	Functional	
Lightning Monitor	MON	46.40.00.00	3 4	ngv AE.MON	ENV.LGH.G	Component	Functional	
RH Monitor	MON	46.50.00.00	3 4	ngv AE.MON	ENV.RH.G	Component	Functional	
Remote Site Monitor	MON	46.60.00.00	3 4	ngv AE.MON	STELBS.G	Component	Functional	
Satellite Topography System	MON	46.90.00.00	3 4	ngv AE.MON	MOB.G	Component	Functional	
Reference signals	RTG	35.00.00.00	2 3 Y	ngv CSPT			Subsystem	
LD Reference & Timing - Generation (RTG)	RTG	35.05.00.00	2 3 Y	ngv CSPT.RTG	BLD.CEB		Subsystem	
Maser and GPS Sources	RTG	35.05.20.00		ngv CSPT.RTG	BLD.CEB	Component	Functional	
Hefling Maser	RTG	35.05.20.02		ngv CSPT.RTG	BLD.CEB	Part - procured	Electronic	
Phase and Timing Synchronization	RTG	35.05.20.04		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
Timebase Receiver	RTG	35.05.20.06		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
GNSS Receiver	RTG	35.05.20.08		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
Frequency Transfer Fixed Sources	RTG	35.05.30.00		ngv CSPT.RTG	BLD.CEB	Component	Functional	
Narrow Linewidth Laser	RTG	35.05.30.02		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
Fixed Microwave Source	RTG	35.05.30.04		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
Frequency Transfer Off-Set Sources	RTG	35.05.40.00		ngv CSPT.RTG	BLD.CEB	Component	Functional	
Tunable Source	RTG	35.05.40.02		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
Time Transfer Sources	RTG	35.05.50.00		ngv CSPT.RTG	BLD.CEB	Component	Functional	
Timing Laser	RTG	35.05.50.02		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
Optical Modulator PSK	RTG	35.05.50.04		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
PS Code-1 Modulator	RTG	35.05.50.06		ngv CSPT.RTG	BLD.CEB	Component	Electronic	
LBA antenna time and frequency reference system	RTG	35.05.80.00		ngv CSPT.RTG	STELBS.G	Component	Functional	
Hydrogen Maser (TBC)	RTG	35.05.80.10		ngv CSPT.RTG	STELBS.G	Part - procured	Electronic	
GPS receiver system (TBC)	RTG	35.05.80.20		ngv CSPT.RTG	STELBS.G	Component	Electronic	
Other parts per TBD	RTG	35.05.81.00		ngv CSPT.RTG	STELBS.G	Component	Electronic	
LD Reference & Timing - Distribution (RTD)	RTD	35.10.00.00	2 3 Y	ngv CSPT.RTD			Subsystem	
Reference Distributor Back	RTD	35.10.20.00		ngv CSPT.RTD	BLD.CEB	Component	Functional	
NLI Distributor	RTD	35.10.20.02		ngv CSPT.RTD	BLD.CEB	Component	Functional	
RF Distributor	RTD	35.10.20.04		ngv CSPT.RTD	BLD.CEB	Component	Functional	
SPS Distributor	RTD	35.10.20.06		ngv CSPT.RTD	BLD.CEB	Component	Functional	
Frequency Transmitter Rack	RTD	35.10.40.00		ngv CSPT.RTD	BLD.CEB	Component	Functional	
Frequency Transmitter	RTD	35.10.40.02		ngv CSPT.RTD	BLD.CEB	Component	Functional	
LD Reference	RTD	35.10.60.04		ngv CSPT.RTD	BLD.CEB	Component	Functional	
Timing Transmitter Rack	RTD	35.10.60.00		ngv CSPT.RTD	BLD.CEB	Component	Functional	
Time Transmitter	RTD	35.10.60.02		ngv CSPT.RTD	BLD.CEB	Component	Functional	
Time transmitter optical assembly	RTD	35.10.60.04		ngv CSPT.RTD	BLD.CEB	Component	Functional	
Time transmitter electronic assembly	RTD	35.10.60.06		ngv CSPT.RTD	BLD.CEB	Component	Functional	
Timing Controller	RTD	35.10.60.20		ngv CSPT.RTD	BLD.CEB	Component	Functional	
RTD central infrastructure	RTD	35.10.70.00		ngv CSPT.RTD	BLD.CEB	Component	Functional	
RTD fibre cabling - central processor building	RTD	35.10.70.02		ngv CSPT.RTD	BLD.CEB	Component	Cabling	
RTD long-haul repeater station equipment	RTD	35.10.80.00		ngv CSPT.RTD	NET.REP.G	Component	Functional	
RTD long-haul repeater station amplifiers (B0 EDFA)	RTD	35.10.80.02		ngv CSPT.RTD	NET.REP.G	Component	Electronic	
RTD long-haul repeater station splice tray	RTD	35.10.80.04		ngv CSPT.RTD	NET.REP.G	Component	Fibre Optic	
RTD long-haul antenna repeater equipment	RTD	35.10.80.06		ngv CSPT.RTD	ANT.PED.REP	Component	Functional	
RTD long-haul antenna repeater (B0 EDFA)	RTD	35.10.80.08		ngv CSPT.RTD	ANT.PED.REP	Component	Electronic	
RTD long-haul antenna amplifier (B0 EDFA)	RTD	35.10.80.10		ngv CSPT.RTD	ANT.PED.REP	Component	Electronic	
LS03 Reference Receiver and Timing module	RTD	35.10.10.00		ngv CSPT.RTD	ANT.PED.G	Component	Mechanical	
LS03 Frequency Receiver Assembly	RTD	35.10.10.02		ngv CSPT.RTD	ANT.PED.G	Component	Electronic	
LS03 Timing Receiver Assembly	RTD	35.10.10.04		ngv CSPT.RTD	ANT.PED.G	Component	Electronic	
LS03 Timing Receiver Transmitter	RTD	35.10.10.06		ngv CSPT.RTD	ANT.PED.G	Component	Electronic	
Central Signal Processor (CSP)	CSP	40.00.00.00	2 3 Y	ngv CSPT			Subsystem	
Subband Processor (SBP)	CSP	40.30.00.00	3 2 Y	ngv CSPT.SBP	BLD.CEB	Component	Functional	
SBP Line Type #1 (ISA based)	LRU	40.30.10.00		ngv CSPT.SBP	BLD.CEB	Component	Functional	
SBP Line Type #2 (ICREMA's SBK)	LRU	40.30.20.00		ngv CSPT.SBP	BLD.CEB	Component	Functional	
SBP Line Type #3 (ICREMA's SBK)	LRU	40.30.30.00		ngv CSPT.SBP	BLD.CEB	Component	Functional	
SBP Local Network and Control Line	LRU	40.30.40.00		ngv CSPT.SBP	BLD.CEB	Component	Functional	
SBP Local Network Line Type #1 (TBC)	LRU	40.30.50.00		ngv CSPT.SBP	BLD.CEB	Component	Functional	
SBP Local Network Line Type #2 (TBC)	LRU	40.30.55.00		ngv CSPT.SBP	BLD.CEB	Component	Functional	
CSP Cooling System Line (TBC)	LRU	40.30.60.00		ngv CSPT.SBP	BLD.CEB	Component	Functional	
Pulse Engine (PSE)	PSE	40.50.00.00	3 3	ngv CSPT.PSE	BLD.CEB	Component	Functional	
Subband Processor LRU	LRU	40.50.10.00		ngv CSPT.PSE	BLD.CEB	Component	Functional	
PSE Processing Node	LRU	40.50.10.10		ngv CSPT.PSE	BLD.CEB	Component	Functional	
PSE Processing Node Hardware	LRU	40.50.10.11		ngv CSPT.PSE	BLD.CEB	Part - procured	Electronic	
PSE Processing Node FPGA Firmware	LRU	40.50.10.12		ngv CSPT.PSE	BLD.CEB	Part - coded	SWFW	
PSE Processing Node CPU Firmware	LRU	40.50.10.13		ngv CSPT.PSE	BLD.CEB	Part - coded	SWFW	
PSE LRU Hardware (rack mounted casing, motherboard, PSU, etc)	LRU	40.50.10.20		ngv CSPT.PSE	BLD.CEB	Part - procured	Electronic	
PSE LRU Software (M&C)	LRU	40.50.10.30		ngv CSPT.PSE	BLD.CEB	Part - coded	SWFW	
PSE Local Monitor and Control	LRU	40.50.20.00		ngv CSPT.PSE	BLD.CEB	Component	Functional	
PSE Local Network	LRU	40.50.30.00		ngv CSPT.PSE	BLD.CEB	Component	Functional	
PSE Cooling System	LRU	40.50.40.00		ngv CSPT.PSE	BLD.CEB	Component	Functional	
CSF Switched Fabric (CSF)	CSF	40.70.00.00	3 3	ngv CSPT.CSF	BLD.CEB	Component	Functional	
CSF Chassis	LRU	40.70.10.00		ngv CSPT.CSF	BLD.CEB	Component	Functional	
CSF Line	LRU	40.70.20.00		ngv CSPT.CSF	BLD.CEB	Component	Functional	
CSF Node Line (TBC)	LRU	40.70.30.00		ngv CSPT.CSF	BLD.CEB	Component	Functional	
CSP Monitor and Control (CMS)	CMS	40.90.00.00	3 3	ngv CSPT.CMS	BLD.CEB	Component	Functional	
Computing & Software System	CSS	50.00.00.00	2 3	ngv CSW	VR.G		Subsystem	
Antenna M&C network switch (M&C)	CSW	50.05.00.00	3 4 Y	ngv CSW	VR.G	Component	Functional	
Proposal Management System	CSW	50.10.00.00	3 4 Y	ngv CSW	VR.G	Component	Functional	
Online Subelement	CSW	50.15.00.00	3 4 Y	ngv CSW	VR.G	Component	Functional	
Offline Subelement	CSW	50.20.00.00	3 4 Y	ngv CSW	VR.G	Component	Functional	
Data Stores	CSW	50.25.00.00	3 4 Y	ngv CSW	VR.G	Component	Functional	
Monitoring & Control System	CSW	50.30.00.00	3 4 Y	ngv CSW	VR.G	Component	Functional	
Array Infrastructure	INF	60.00.00.00	2 3 Y	ngv INF			Subsystem	
Existing array facilities	INF	60.05.00.00		ngv INF	STE.CP	Component	Infrastructure	
Antenna foundations	INF	60.05.00.00	3	ngv INF	ANT.G	Component	Infrastructure	
Operator roads	INF	60.10.00.00		ngv INF		Component	Infrastructure	
Utility Trench	INF	60.15.00.00		ngv INF		Component	Infrastructure	
Fibre Utility	INF	60.20.00.00		ngv INF		Component	Infrastructure	
Electrical Utility	INF	60.25.00.00		ngv INF		Component	Infrastructure	
Buildings	BLD	61.00.00.00	3	ngv INF			System	
ngVLA Site Buildings	NSB	61.10.00.00	2 4 Y	ngv INF			Subsystem	
NSB Central Electronics Building	INF	61.10.10.00		ngv INF	BLD.CEB	Component	Infrastructure	
NSB Central Support Building	INF	61.10.20.00		ngv INF	BLD.CEB	Component	Infrastructure	
Operations Buildings	OPS	65.00.00.00	2 4 Y	ngv INF			Subsystem	
Maintenance Center Building	INF	65.10.00.00		ngv INF	BLD.ANT	Component	Infrastructure	
Repair Center Building	INF	65.20.00.00		ngv INF				

PBS Item Classes

Level	PBS Item class	ALIM	Description
1	Facility	sys	Complete operational capability including prime equipment, support equipment, facilities, training systems, etc.
2	System	sys	Combination of subsystems
3	Subsystem	phys	Identified as a particular level in the PBS, below the System, allocated a set of requirements from the system and interfacing with other subsystems (N^2 diagram)
4	Component	phys	Assembly or grouping of Parts
5	Part - procured	phys	Leaf level item - Procured COTS parts
5	Part - manufactured	phys	Leaf level item - Manufactured parts (mechanical, cables, etc.)
5	Part - coded	phys	Leaf level SW items

PBS Item Types	System	Subsystem	Component	Part
Functional	y	y	y	
Mechanical			y	y
Mechatronic			y	y
Electronic			y	y
Electrical			y	y
Fibre Optic			y	y
SW/FW			y	y
Computing			y	y
Cabling			y	y
Piping			y	y
Infrastructure			y	y

Organizational Instances

Org type	Organization	Team	Code	Class
	NRAO		NRAO	ORG
	ngVLA		ngVLA	PRJ
		ngVLA Project Office	ngV.PO	IPT
		ngVLA Project Management	ngV.PM	IPT
		ngVLA Science Team	ngV.SCI	IPT
		Systems Engineering IPT	ngV.SE	IPT
		Antenna IPT	ngV.ANT	IPT
		Antenna Electronics IPT	ngV.AE	IPT
		Front End	ngV.AE.FE	WPT
		Cryogenics	ngV.AE.CRY	WPT
		Integrated Receiver Digitizer	ngV.AE.IRD	WPT
		Bins, Racks & Modules	ngV.AE.BMR	WPT
		DC Power Supplies	ngV.AE.PSU	WPT
		Environmental Control System	ngV.AE.EEC	WPT
		Water Vapor Radiometer	ngV.AE.WVR	WPT
		Monitor & Control interface layer	ngV.AE.HIL	WPT
		Antenna Fibre Optic Distribution	ngV.AE.AFD	WPT
		Environmental Monitoring System	ngV.AE.MON	WPT
		CSP and Reference Signals IPT	ngV.CSPT	IPT
		Digital Back End	ngV.CSPT.DBE	WPT
		Sub-band Processor	ngV.CSPT.SBP	WPT
		Pulsar Engine	ngV.CSPT.PSE	WPT
		CSP Switched Fabric	ngV.CSPT.CSF	WPT
		CSP Monitor and Control	ngV.CSPT.CMS	WPT
		Antenna Time and Frequency	ngV.CSPT.ATF	WPT
		LO Ref & Timing Generation	ngV.CSPT.RTG	WPT
		LO Ref & Timing Distribution	ngV.CSPT.RTD	WPT
		Fibre and Data networks IPT	ngV.FIB	IPT
		Infrastructure IPT	ngV.INF	IPT
		Site Development IPT	ngV.SD	IPT
		Science Support IPT	ngV.SCI	IPT
		Broader Impacts IPT	ngV.BI	IPT
		Software and Computing IPT	ngV.CSW	IPT
		Education & Public Outreach IPT	ngV.EPO	IPT
		Operations IPT	ngV.OPS	IPT
		Safety, Security, Health & Env Mgt	ngV.SSHE	IPT

Contractor

Mtex Antennas	MTEX	ORG
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Collaborator

National Astronomy Observatory of Japan (NAOJ)	NAOJ	ORG
National Research Council Canada (NRC)	NRC	ORG

Location Instances				Location attribute
	Code	Location Class	Location Name	GIS coordinate
Main Antennas	ANT.G	ANT	Generic Main Antenna	
	ANT.FED.G	ANT.FED	Front End - Generic Main Antenna	
	ANT.AUX.G	ANT.AUX	Auxilliary Enclosure - Generic Main Antenna	
	ANT.WVR.G	ANT.WVR	Water Vapor Radiometer - Generic Main Antenna	
	ANT.ELE.G	ANT.ELE	Elevation assembly - Generic Main Antenna	
	ANT.YOK.G	ANT.YOK	Yoke area - Generic Main Antenna	
	ANT.PED.G	ANT.PED	Pedestal - Generic Main Antenna	
	ANT.PED.REP	ANT.PED	Pedestal - Main Antennas used as repeater stations	
	ANT.SHE.G	ANT.SHE	Antenna shelter - Generic Main Antenna	
	ANT #1	ANT.001	ANT	Location of antenna #1
ANT #2	ANT.002	ANT	Location of antenna #2	
ANT #3	ANT.003	ANT	Location of antenna #3	
ANT #4	ANT.004	ANT	Location of antenna #4	
ANT #5	ANT.005	ANT	Location of antenna #5	
Short Baseline Antennas (SBAs)	SBA.G	SBA	Generic Short Baseline Antenna	
	SBA.FED.G	SBA.FED	SBA Feed Indexer - Generic	
	SBA.AUX.G	SBA.AUX	SBA Auxilliary Enclosure - Generic	
	SBA.YOK.G	SBA.YOK	SBA Yoke area - Generic	
	SBA.PED.G	SBA.PED	SBA Pedestal - Generic	
	SBA.SHE.G	SBA.SHE	SBA shelter - Generic	
	SBA.WVR.G	SBA.WVR	SBA Water Vapor Radiometer - Generic	
SBA Antenna #1	SBA.01	SBA	Location of SBA #1	
SBA Antenna #2	SBA.02	SBA	Location of SBA #2	
SBA Antenna #3	SBA.03	SBA	Location of SBA #3	
SBA Antenna #4	SBA.04	SBA	Location of SBA #4	
SBA Antenna #5	SBA.05	SBA	Location of SBA #5	
Total Power Antenna	TPA.G	TPA	Genereric TPA	
	TPA#1	TPA.01	TPA	Location of TPA #1
	TPA#2	TPA.02	TPA	Location of TPA #2
	TPA#3	TPA.03	TPA	Location of TPA #3
TPA#4	TPA.04	TPA	Location of TPA #4	
Buildings	BLD.CEB	BLD	Central Electronics Building	
	BLD.CSB	BLD	Central Support Building	
	BLD.MNT	BLD	Maintenance Center Building	
	BLD.REP	BLD	Repair Center Building	
	BLD.AOC	BLD	Array Operations Center Building	
	BLD.ROS	BLD	Remote Operations Station Building	
	BLD.VIC	BLD	Visitor Center Building	
	BLD.SDC	BLD	Science Data Center Building	
BLD.SOC	BLD	Science Operations Center Building		
Central site	STE.CP	STE	Central Array Site	
Spiral arms	STE.SA.01	STE.SA	Spiral Arm #1	
	STE.SA.02	STE.SA	Spiral Arm #2	
	STE.SA.03	STE.SA	Spiral Arm #3	
	STE.SA.04	STE.SA	Spiral Arm #4	
	STE.SA.05	STE.SA	Spiral Arm #5	
Mid station arms	STE.MID.01	STE.MID	Mid baseline spiral #1	
	STE.MID.02	STE.MID	Mid baseline spiral #2	
	STE.MID.03	STE.MID	Mid baseline spiral #3	
	STE.MID.04	STE.MID	Mid baseline spiral #4	
	STE.MID.05	STE.MID	Mid baseline spiral #5	
LBS station sites	STE.LBS.G	STE.LBS	Generic LBS Site	
	STE.LBS.01	STE.LBS	Long Baseline Station Site #1	
	STE.LBS.02	STE.LBS	Long Baseline Station Site #2	
	STE.LBS.03	STE.LBS	Long Baseline Station Site #3	
	STE.LBS.04	STE.LBS	Long Baseline Station Site #4	
	STE.LBS.05	STE.LBS	Long Baseline Station Site #5	
	STE.LBS.06	STE.LBS	Long Baseline Station Site #6	
	STE.LBS.07	STE.LBS	Long Baseline Station Site #7	
STE.LBS.08	STE.LBS	Long Baseline Station Site #8		
Env Mon sites generic	ENV.G	ENV	Generic Environmental Monitoring Site	
	ENV.WTH.G	ENV.WTH	Generic Weather Stations	
	ENV.ATM.G	ENV.ATM	Generic Atmospheric Phase Monitor	

	ENV.CLD.G	ENV.CLD	Generic Cloud monitor
	ENV.LGH.G	ENV.LGH	Generic Lightning monitor
	ENV.RFI.G	ENV.RFI	Generic RFI monitor
Env Mon Sites	ENV.001	ENV	Env Mon Site #1
	ENV.002	ENV	Env Mon Site #2
	ENV.003	ENV	Env Mon Site #3
	ENV.004	ENV	Env Mon Site #4
	ENV.005	ENV	Env Mon Site #5
Repeater stations	NET.REP.G	NET.REP	Generic Repeater Station
	NET.REP.001	NET.REP	Repeater station #1
	NET.REP.002	NET.REP	Repeater station #2
	NET.REP.003	NET.REP	Repeater station #3
	NET.REP.004	NET.REP	Repeater station #4
	NET.REP.005	NET.REP	Repeater station #5
Mobile locations	MOB.G	MOB	Mobile locations
	VIR.G	VIR	Virtual












020.10.20.00.00-0004-DSN-ngVLA PBS

Final Audit Report

2022-11-21

Created:	2022-11-07
By:	Alicia Kuhn (akuhn@nrao.edu)
Status:	Signed
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